

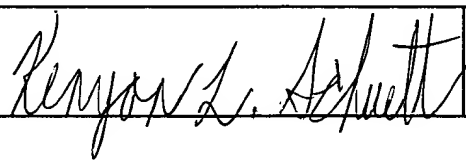
9-15-04

1638

JW

TRANSMITTAL FORM <i>(to be used for all correspondence after initial filing)</i>	Complete if Known	
	Application Number	09/140,886
	Filing Date	August 26, 1998
	First Named Inventor	Herbert Martin WILSON
	Examiner Name	D. Fox
	Group Art Unit	1638
Total Number of Pages in This Submission <u>35</u>	Attorney Docket Number	1205-003
ENCLOSURES (check all that apply)		

- | | | |
|------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Fee Transmittal Form | <input type="checkbox"/> Assignment Papers | <input type="checkbox"/> After Allowance Communication to Group |
| <input type="checkbox"/> Fee Attached | <input type="checkbox"/> Drawing(s) | <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences |
| <input checked="" type="checkbox"/> Amendment/Reply | <input type="checkbox"/> Licensing-related Papers | <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) |
| <input type="checkbox"/> After Final | <input type="checkbox"/> Petition | <input type="checkbox"/> Proprietary Information |
| <input type="checkbox"/> Affidavits/declaration(s) | <input type="checkbox"/> Petition to Convert to a Provisional Application | <input type="checkbox"/> Status Letter |
| <input type="checkbox"/> Extension of Time Request | <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address | <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): |
| <input type="checkbox"/> Express Abandonment Request | <input type="checkbox"/> Terminal Disclaimer | 1) Certificate of Express Mail Label No. EV207751645US |
| <input type="checkbox"/> Information Disclosure Statement | <input type="checkbox"/> Request for Refund | |
| <input type="checkbox"/> Certified Copy of Priority Document(s) | <input type="checkbox"/> CD, Number of CD(s) | |
| <input type="checkbox"/> Response to Missing Parts/Incomplete Application | REMARKS: | |
| <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53 | | |

SUBMITTED BY		Complete (if applicable)	
NAME & REG. NUMBER	Kenyon L. Schuett, Reg No. 44,324		
SIGNATURE		DATE	September 14, 2004
		DEPOSIT ACCOUNT USER ID	



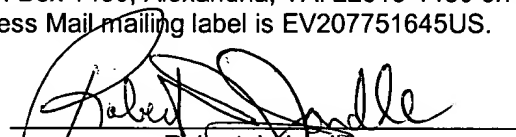
**IN THE
UNITED STATES
PATENT AND TRADEMARK
OFFICE**

<i>Application Number</i>	09/140,886
<i>Filing Date</i>	August 26, 1998
<i>First Named Inventor</i>	Herbert Martin WILSON
<i>Group Art Unit</i>	1638
<i>Examiner Name</i>	David Fox
<i>Attorney Docket Number</i>	1205-003

Title of the Invention: **Transgenic Plants**

CERTIFICATE OF EXPRESS MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail (post office to addressee) in an envelope addressed to: Mail Stop Amendments, Commissioner for Patents, P.O. Box 1450, Alexandria, VA. 22313-1450 on this 14th day of September, 2004. The number of the Express Mail mailing label is EV207751645US.


Robert J. Jondle
Reg. No. 33,915

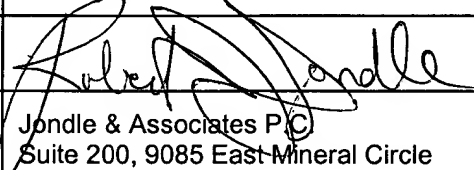
SUPPLEMENTAL AMENDMENT

Mail Stop Amendments
Commissioner for Patents
P O Box 1450
Alexandria VA 22313-1450

Sir:

Please enter the Declaration under 37 C.F.R. §1.132 of Dr. Wilf A. Keller which is being filed as a supplemental amendment.

If it is determined that there is a fee for this Amendment please use Deposit Account No. 50-2368 in the name of Jondle & Associates PC.

RESPECTFULLY SUBMITTED,					
NAME AND REG. NUMBER	Robert J. Jondle, Reg. No. 33,915				
SIGNATURE				DATE	September 14, 2004
Address	Jondle & Associates P.C. Suite 200, 9085 East Mineral Circle				
City	Centennial	State	CO	Zip Code	80112
Country	U.S.A.	Telephone	303-799-6444	Fax	303-799-6898



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE	<i>Application Number</i>	09/140,886
	<i>Filing Date</i>	August 26, 1998
	<i>First Named Inventor</i>	Martin M. Wilson
	<i>Group Art Unit</i>	1638
	<i>Examiner Name</i>	D. Fox
	<i>Attorney Docket Number</i>	N1205-003
<i>Title of the Invention:</i> TRANSGENIC PLANTS		

DECLARATION UNDER 37 C.F.R. § 1.132

I, Wilf A. Keller, hereby declare that:

1. I received my Ph.D. degree from University of Saskatchewan in Saskatoon. I am currently employed by the National Research Council of Canada in the Plant Biotechnology Institute at Saskatoon as Research Director for the Transgenic Plant Centre. I have been actively engaged in the area of plant cell biology and plant transformation for 30 years. My curriculum vitae is attached as Exhibit A.

2. I have reviewed the references described below. It is my understanding that these references have been cited by the Examiner in the above-identified application.

3. Briefly, it is my opinion that none of the references cited by the Examiner provides a demonstration of plant transformation. Molecular confirmation of transformation and Mendelian segregation of the introduced genes is lacking in all cases. None of the protocols described in these references have gained acceptance among scientists in the general scientific community conducting research in the area of plant transformation. At this time the introduction of DNA into plants, as described in these references, has not resulted in genetic transformation as understood by the scientific community.

4. Specifically, Soyfer, V.N. (Hereditary variability of plants under the action of exogenous DNA. Theoretical and Applied Genetics, 58, 225-235 (1980)) describes the injection of DNA into barley grains at the milk stage of maturity. No molecular data confirming the occurrence of transformation is presented and Mendelian segregation of characters thought to result from transformation was not observed. In the twenty years that have passed since publication of this paper no more evidence of transformation using this approach has been obtained despite the fact that cloned marker genes are now available.

5. Turbin, N.V., Soyfer, V.N., Kartel, N.A., Chekalin, N.M., Dorohov, Y.L., Titov, Y.B., and Cieminis, K.K. (Genetic modification of the *waxy* character in barley under the action of exogenous DNA of the wild variety. *Mutation Research*, 27, 59-68 (1975)) describes earlier work from the same laboratory that produced the work described above in Paragraph 4 (Soyfer, 1980). The same comments made in Paragraph 4 apply to this reference.

6. Holl, F.B., and Olson, D.J. (The effect of exogenous DNA on the nodulation of a non-nodulating line of *Pisum sativum* L. *Euphytica*, 32 (1), 171-176 (1983)), describe an attempt to deliver DNA to pea seeds by soaking the pea seeds in a solution of DNA. Nodulation was used as the criterion for determining whether or not DNA uptake had occurred. No molecular or segregation data are presented. Data indicated that stable integration was not accomplished.

7. Zhou, G-Y. (Genetic manipulation of the ovule after pollination. In: Chapman, G.P., Mantell, S.H., and Daniels, R.W. (eds). *Experimental manipulation of ovule tissues*. Longman, New York, pp 240-250. (1986)) describe an attempt to deliver DNA to plants by injection into the placenta or stigma of flowers of a range of plants. No molecular data showing integration was presented. No Mendelian segregation of any introduced trait was reported.

8. Kamra, O.P., Ledoux, L., and Huart, R. (Apparent destruction and reutilization of heterologous DNA applied to seeds of *Lactuca sativa*. *Arch. Int. Physiol. Biochim.* 85 (5): 986-987, (1977)) describing soaking lettuce seeds in tritium-labelled bacterial DNA. Radioactivity was found at the density of the lettuce DNA. No evidence for genetic transformation of lettuce is presented.

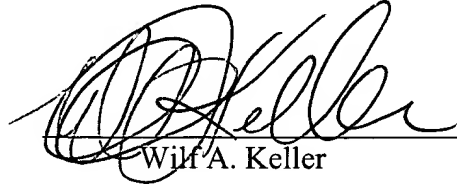
9. Korohoda, J. and Strzalka, K. (High efficiency genetic transformation in maize induced by exogenous DNA. *Z Pflanzenphysiol.* 94, 95-99, (1979)) describe soaking maize seeds in maize DNA extracted from plants carrying a dominant phenotypic marker. The seeds were subjected to vacuum treatment and protamine was added to the incubation. No molecular data or data showing Mendelian segregation of progeny are presented to support the claim that genetic transformation had occurred.

10. De Lafontayne, J. (A process for transforming cells. European Patent Application 0 299 552 (A1), 1988)) describes the introduction of barley DNA into the embryo sac of wheat. No molecular data or evidence of Mendelian segregation is produced in this patent application to support the conclusion that genetic transformation of wheat was accomplished.

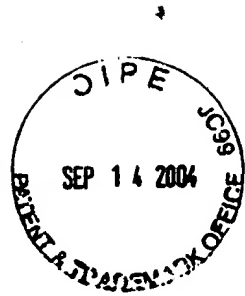
11. In summary, none of these references either describe in detail or present evidence which would lead a person of ordinary skill in the art to conclude that the attempted transformation of the described plant species by the disclosed method was ever achieved. Molecular data showing transformation of the plant species and transmission of introduced DNA to progeny plants is lacking in all of the references.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: January 23, 2004



Wilf A. Keller



CURRICULUM VITAE

I. BASIC INFORMATION

Name: Wilfred Arthur Keller

Date/Place of Birth: May 12, 1947, Melville, Saskatchewan, Canada

Present Address: National Research Council of Canada
Plant Biotechnology Institute
110 Gymnasium Place
Saskatoon, Saskatchewan S7N 0W9

Phone (work): (306) 975-5569 Fax (306) 975-4191

Home Address: 234 Emmeline Road, Saskatoon, S7J 5B6

Phone (home): (306) 374-5902

II. EDUCATION

B.S.A. Crop Science, University of Saskatchewan, 1969

Ph.D. Crop Science, University of Saskatchewan, 1972

POST DOCTORAL TRAINING

National Research Council Postdoctoral Fellow at the Max-Planck-Institut für Biologie, Tübingen, West Germany 1972-73.

EMPLOYMENT RECORD

National Research Council of Canada, Plant Biotechnology Institute, Saskatoon (1989 - Present)

- 1999 - Present Research Director
- 1989 - Present Head, Transgenic Plant Centre
- 1992 - 1999 Principal Research Officer
- 1990 - 1999 Group Leader, Brassica Biotechnology
- 1989 - 1992 Senior Research Officer

Agriculture and Agri-Food Canada, Ottawa (1973 - 1989)

- 1973 - 1982 Research Scientist
- 1982 - 1989 Senior Research Scientist
- 1980 - 1984 Head, Genetic Engineering Section, Ottawa Research Centre
- 1984 - 1989 Program Chair, Biotechnology, Plant Research Centre

IV. APPOINTMENTS, COMMITTEES, BOARDS

1. Chairman of the Haploidy and Cell Genetics Program, Ottawa Research Station, 1975-1980.
2. Adjunct Professor, Biology Department, Carleton University 1976-1992.
3. Promoted from Research Scientist Level-1 to Research Scientist Level-2, 1977.
4. Chief of the Genetic Engineering Section, Ottawa Research Station, 1980-1987.
5. Promoted from Research Scientist Level-2 to Research Scientist Level-3, 1982.
6. Adjunct Professor, Crop Science Department, University of Guelph, 1986- .
7. Recipient of CSP Canola Research Award, 1986.
8. Chairman, Plant Biotechnology Program, Plant Research Center, 1987-1989.
9. Affiliated Scientist, Plant Biotechnology Institute, National Research Council, 1987-1989.
10. Associate Editor, Plant Cell Tissue and Organ Culture, 1981-1986.
11. Member of the Research and Technical Committee, Canola Council of Canada, 1986- .
12. Coordinator of ISTC (MOSST) plant biotechnology network, 1985-1990.
13. Member of the NSERC Grant Selection Committee on Plant Biology, 1987-1989.
14. National Correspondent for the Canada Division, International Association for Plant Cell and Tissue Culture, 1986-1990.
15. Chairperson, Organizing Committee of the Second Canadian Workshop on Plant Tissue and Genetic Engineering, Ottawa, May 30-June 2, 1988.
16. Vice-Chairperson, Gordon Conference on Plant Cell and Tissue Culture, 1987.
17. Chairperson, Gordon Conference on Plant Cell and Tissue Culture, 1989.
18. Head, Transgenic Plant Centre, Plant Biotechnology Institute, National Research Council of Canada, Saskatoon, 1989- .
19. Leader, Brassica Biotechnology Group Plant Biotechnology Institute, National Research Council of Canada, Saskatoon, 1990- .
20. Adjunct Professor, Department of Crop Science and Plant Ecology, University of Saskatchewan, 1990- .
21. Member of the Advisory Committee for the Agriculture and Agri-Food Canada Research Station in Saskatoon, 1990- .
22. Member of the Advisory Committee for the Plant Research Center, Agriculture and Agri-Food Canada, 1991-1995.
23. Member of the Review Panel for the Vancouver Research Station, Agriculture and Agri-Food Canada, 1991.

24. Member of the Review Panel for the Department of Crop Science and Plant Ecology, University of Saskatchewan, 1992.
25. Member of the CARC sub-committee on Biotechnology, 1992- .
26. Member of the Advisory Committee on Biotechnology (RE: regulations for products of biotechnology), Food Production and Inspection Branch, Agriculture and Agri-Food Canada, 1992- .
27. Member of the CEF (Control Experimental Farm) Advisory Committee, Agriculture and Agri-Food Canada, 1992-1994.
28. Member of the Crops Committee, AgWest Biotech, Saskatoon, 1992- .
29. Promoted from Senior Research Officer to Principal Research Officer, 1992.
30. Chairperson of the organizing committee for the Eighth Crucifer Genetics Workshop, Saskatoon, July 21-24, 1993.
31. Adjunct Professor, Department of Plant Science, University of Alberta, 1994- .
32. Member of the Agriculture Canada Advisory Committee on Transgenic Plants as Livestock Feed, 1994- .
33. Member of the Board of Directors, Global Agricultural Biotechnology Association (GABA), 1994- .
34. Member of the Board of Directors of AgWest Biotech, 1995- .
35. Co-Chair of the Organizing Committee for the Fourth Canadian Workshop on Plant Tissue Culture and Genetic Engineering, Saskatoon, June 1-4, 1996.
36. Member of the Organizing Committee for the Agbiotech International Conference, Saskatoon, June 11-14, 1996.
37. Member of the Sask. Agricultural and Food Adhoc Biotechnology Team to assist in the development, 1995-1996.
38. Member of the Stakeholder's Advisory Committee for the Development of a Strategic Plan for Saskatchewan's Agriculture Biotechnology Sector, 1995-1996.

KEY RESEARCH CONTRIBUTIONS

- Contributed to the development of protocols for the isolation and culture of plant protoplasts (1969-90).
- Developed a high pH-calcium method for inducing protoplast fusion and producing somatic hybrid cells (1972-73).
- Developed methodology for the reliable and efficient production of Brassica spp haploids through anther culture (1974-84) and isolated microspore culture (1983-) and transferred these technologies to more than 30 public and private Canadian and foreign organizations.
- Developed reliable somatic hybridization technology in Nicotiana spp, Solanum spp and Brassica spp; demonstrated the potential of this technology for the interspecific transfer of desirable agronomic traits (1973-91).

- Collaborated in the application of somatic hybrids (between *Nicotiana tabacum* and *Nicotiana rustica*) in tobacco cultivar development; this work resulted in the release of the cultivar Delfield which is widely accepted by Canadian tobacco growers.
- Developed tissue culture and plant regeneration procedures for flax, triticale eggplant, canola, mustard, cole crops, nigerseed and horseradish (1974-).
- Selected herbicide-resistant cell lines from mutagenized haploid canola cell cultures; collaborated with molecular biologists in the isolation and characterization of the mutant gene (1985-92).
- Demonstrated that microspore-derived embryos of canola have the capacity to produce storage lipids (oil) in vitro (1976-77); contributed to several studies involving the use of microspore-derived embryos for characterization and isolation of lipid biosynthetic enzymes (1987-).
- Contributed to research projects involving the cytological, biochemical and molecular characterization of microspore-derived embryogenesis in Brassica sp (1979-).
- Developed/optimized Agrobacterium-mediated gene transfer methodology in Brassica spp (1990-).
- Present research activities include: 1) development and application of microspore/haploid production methodology in recalcitrant Brassica spp (ie. *B. rapa*, *B. juncea*); 2) development of reliable and effective gene transfer methodology in Brassica spp; 3) genetic improvement of Brassica crops through gene insertion including: disease and insect resistance, enhanced seed and oil yield, altered seed composition and herbicide tolerance.
- Production, characterization and utilization of haploid canola (and related Brassica species) developed via microspore embryogenesis
 - This technology has been widely adopted by canola breeding organizations.
- Production, characterization and utilization of somatic hybridization technology in selected crop species.
 - This technology has been successfully employed to produce disease-resistant tobacco varieties.
- Development and improvement of genetic engineering technology for canola and selected species.
 - Through a collaborative program, contributed to the development of the first transgenic crop commercially produced in Canada (i.e. Innovator Canola, commercialized by AgrEvo, 1995).

INDUSTRIAL RESEARCH COLLABORATIONS

Allied Chemicals	(1981 - 1985)
Canola Council of Canada	(1985 - 1998)
Imperial Tobacco	(1985 - 1989)
Allelix Inc.	(1985 - 1988)
Hoechst/AgrEvo	(1986 - 1997)
Saskatchewan Wheat Pool	(1991 - 1994)
Dow AgroSciences	(1995 - 2000)
Mycogen Plant Sciences	(1997 - 1999)

UNIVERSITY COLLABORATIONS

Carleton University	(1976 - 1992)
University of Guelph	(1985 - 1990)
McGill University	(1989 - 1990)
Queen's University	(1989 - 1994)
University of Saskatchewan	(1989 - Present)
University of Manitoba	(1992 - Present)

PATENTS

Co-inventor on three patents.

1. Contributions to the training of highly qualified personnel

a) Postdoctoral Fellows/Research Associates

- **A. Ferrie**; Brassica microspore culture technology; (1990-94 with NRC, 1994-99 with Canola Council; 1999-02 with NRC)
- **J. MacPherson** (1994-97); Isolation/characterization of genes and promoters in glucosinolate biosynthesis; now with Performance Plants Inc.
- **S. Lee** (1996-98); Isolation/characterization of constitutive and tissue-specific promoters; now president of Nexgen, Inc. (Korea)

b) Graduate Students (co-supervised with a University of Saskatchewan faculty member; research was undertaken in my lab)

- **S. Lee** (1990-96); Ph.D.; Development of transformation and promoter tagging methodologies for Brassica oleracea; now with DongBu Chemicals, S. Korea
- **B. Weston** (1991-continuing/to be completed 1999); Ph.D.; Identification and characterization of novel constitutive promoters; now with Plant Genetics Systems
- **V. Babic** (1991-94); M.Sc.; Development of efficient transformation methodology for Brassica carinata
- **V. Babic** (1994-97); Ph.D.; Identification and characterization of novel tissue specific promoters in B. carinata; now with Saskatchewan Wheat Pool
- **H-P. Hong** (1992-95); M.Sc.; Evaluation of floral specific promoters in Brassica napus; now with Saskatchewan Wheat Pool
- **N. El-Rouby** (1992-95); M.Sc.; Characterization of a cloned myrosinase gene in transgenic Brassica and tobacco; now a Ph.D. student at McGill University
- **S. Hughes** (1996-1999); M.Sc.; Development of effective transformation technology for Eruca sativa, now with Dow AgroSciences Canada Inc.
- **C. Sonntag** (1999-continuing); M.Sc.; Genetic engineering for enhanced phytoremediation

c) Technicians

- **D. Epp** (1990-94); Microspore culture technology; now with Aventis Seeds
- **K. Oddie** (1991-94); Canola transformation; accompanied spouse to Quebec
- **J. Schmidt** (1991-94); B. juncea transformation; now with Sask. Wheat Pool
- **M. Swartz** (1991-94); B. rapa transformation; now self employed artist
- **G. Feist** (1992-93); B. napus transformation; now a permanent employee in PBI
- **T. Luciw** (1992-96); Brassica microspore culture; now with Sask. Wheat Pool
- **D. Puttick** (1994-95); B. napus transformation; now with Aventis
- **K. Duryba** (1996-97); Brassica microspore culture; now with Dow Agro Sciences
- **J. Schnaider** (1996-97); Brassica spp transformation; now with Aventis.
- **D. Aldcorn** (1997-2002) Brassica spp transformation; now in Law School

SUMMARY OF RELATED ACTIVITIES

1. Invited to present lecture and laboratory sessions at a plant tissue culture course at the Alton Jones Cell Science Center, Lake Placid, New York 1979, 1980, 1981. Organized a full credit Carleton University graduate study reading course on plant somatic cell genetics (1980/81).
2. Recipient of NSERC Individual Operating Grants since 1979. Co-recipient of an NSERC Cooperative Grant (April 1978-Mar. 1981) and NSERC Strategic Grants (Nov. 1980-Oct. 1983; Nov. 1987-Oct. 1990, Nov. 1989-Oct. 1994, Nov. 1995-Oct. 1998).

3. Recipient of annual research funds (ranging from 20-60 K/yr) from the Canola Council of Canada (1982-) to undertake biotechnology research relevant to canola improvement.
4. 7th International Rapeseed Congress, Poland. 1987. Keller, W.A., Fan, Z., Pechan, P., Long, N., Grainger, J. An efficient method for culture of isolated microspores of *Brassica napus*.
5. 7th International Rapeseed Congress, Poland. 1987. Faz, Z. Holbrook, L., Keller, W.A. Isolation and enrichment of embryogenic microspores in *Brassica napus* L. by fractionation using percoll density gradient. pp.92-96.
6. Acted as a collaborator on an OMAF-funded project (\$30K/yr 1987-90) involving the utilization of somatic-hybridization to transfer disease-resistance traits into tomato (in cooperation with the Agriculture Canada Research Station in Harrow).
7. Co-recipient of an IDRC grant (\$130K for 2 yr) to undertake research on haploid production in tropical oilseeds: sesame, nigerseed and safflower (Apr. 1, 1986 - Mar. 31, 1988).
8. Developed an in-house collaborative research program with Allied Chemical Canada Ltd. involving the production and assessment of *Brassica oleracea* haploids in the development of hybrid varieties (1981-85; total value of contract >\$700K). This collaborative project resulted in the establishment of a "spin-off" company, Paladin Hybrids Inc.
9. In collaboration with Carleton University and Agriculture Canada, Delhi Research Station, produced somatic hybrids of tobacco (*Nicotiana tabacum*) and a wild species (*N. rustica*) which were used to develop disease-resistant, high quality tobacco breeding lines; played a role in the establishment of a 5-year research agreement (1987-92; total \$417K) between Agriculture Canada and Imperial Tobacco Ltd. to employ somatic hybridization technology in tobacco improvement. Somatic hybrids were used in a breeding program to develop a new tobacco cultivar (Delfield). This represents the first example of a case in which somatic hybrids were successfully used in developing a new cultivar.
10. Developed canola microspore culture technology effective for mutant selection; played a key role in the establishment of a 4-year research agreement (Jan. 1. 1986-Dec. 31, 1989; \$120K/yr) with Hoechst Canada Inc. involving *in vitro* selection for herbicide-resistant canola mutants.
11. Established collaborative research on cell biology and genetics with Carleton University; acted as co-supervisor for five M.Sc. and three Ph.D. projects.
12. While employed at Agriculture Canada, served as advisor for six NSERC postdoctoral scientists and six sabbatical visitors.
13. Played an organizing role in the development of a proposal for a NSERC sponsored National Network of Centres of Excellence (May-Oct., 1988).
14. As Chairman of the Plant Biotechnology Program, Plant Research Centre (1987-1989), responsible for providing scientific and administrative leadership for a staff of 12 professional staff members; advised the Director and Deputy Director on issues in the area of biotechnology; served as a resource person for senior managers in the Research Branch; supervised two technicians; provided advice to students, visiting scientists and industry contract staff. (With the inclusion of students, visitors and industry staff, the program consisted of 50-55 persons).
15. Co-recipient of a major NSERC strategic grant to D.T. Dennis, Queen's University (and five co-applicants) valued at 283 K/yr for 4 years (1989-93) and extended for an additional year (1993-94) at 200 K to undertake research on genetic engineering of altered carbon metabolism in canola with the aim of increasing oil content. Presently supervising a technical assistant (supported by the grant) who is producing and characterizing transgenic canola at both greenhouse and field plot levels.

16. Established collaborative research on genetic engineering of crops with the University of Saskatchewan; appointed as adjunct professor, Dept. of Crop Science and presently co-supervising five graduate students.
17. NRC team leader collaborative project with Hoechst Canada (now AgrEvo Canada) on genetic engineering of herbicide resistance in Brassica spp. (\$200 K/yr for 5 years, 1990-94). Provide supervision to Hoechst employees and advice to the Hoechst Biotech team leader and to senior Hoechst managers.
18. Manager of a IRAP-M project with Garst Seeds Canada on development/application of microspore embryogenesis in canola (\$10 K/yr for 2 years, Dec. 90 - Dec. 92).
19. Leader of a NRC Contribution project with Sask Wheat Pool (SWP) on production and utilization of microspore-derived plants of Brassica juncea in the development of canola quality B. juncea. Along with a NRC Research Associate, provide advice/guidance to two SWP technical assistants.
20. 8th International Rapeseed Congress, Saskatoon. 1991. Simmonds, D.H., Gervais, C., Keller, W.A. Embryogenesis from microspores of embryogenic and non-embryogenic lines of Brassica napus.
21. 8th International Rapeseed Congress, Saskatoon. 1991. Oelck, M.M., Phan, C.V., Eckes, P., Donn, G., Rakow, G., Keller, W.A. 1991. Field resistance of canola transformants (Brassica napus L.) to Ignite (Phosphinotricin).
22. Co-leader of an NRC Contribution project with the Canola Council of Canada and the Sask. Canola Dev. Commission (Apr. 1, 1992 - Apr. 1, 1995) on the improvement of canola through insertion of genes for disease resistance and insect tolerance. Provide co-supervision to two technical officers.
23. Played a key role in the establishment of an IRAP-supported consortium project (July '92 - July '95) of seven Brassica campestris canola breeding organizations to undertake research on the development of microspore culture/haploid production. Consortium members include Agriculture Canada Research Station at Saskatoon, University of Manitoba, Alberta Wheat Pool, Western Grower Seed Corp, Zeneca Seeds, Pioneer Hi-Bred and King Agro. Members are represented by the Canola Council of Canada. Along with a Research Associate, provide supervision to three research technicians supported by the consortium to undertake this research.
24. Iowa International Crop Science Congress. 1992. Downey, R.K., Keller, W.A. Modifying oil and protein crop plants: New concepts and approaches.
25. Established cooperative research with University of Manitoba staff in the area of Brassica cell and tissue culture and gene transfer. (Involves collaboration with Prof. R. Scarth, C.E. Palmer and B. Fristensky.) Part of this collaboration involves support from the Western Grains Research Foundation (July '93 - July '96) to undertake cooperative research on the transfer of disease resistance response genes into canola. A half-time research technician working at PBI is supported by this Grant.
26. NRC leader of a contractual agreement (1993-94) involving the transfer of Brassica gene transfer technology to PGS Canada.
27. NRC scientific coordinator for a collaborative project (1994-1998) with Zeneca Seeds Canada Inc. on the development of disease tolerant canola through application of cell culture selection technique.
28. NRC leader/coordinator for a collaborative project with AgrEvo Canada to generate herbicide-tolerant Brassica crops and to establish a molecular-based hybrid seed production system for canola (1994-1997).
29. Member of a PBI collaborative research project with CanAmara Foods (includes financial support from NRC's Biotech Contribution Fund) on the development of super high erucia acid rapeseed, (PBI's Seed

Oil Modification Group is the lead group with the Brassica Biotech Group providing support in genetic transformation) 1994-97.

30. 9th International Rapeseed Congress, Cambridge. 1995. Dormann, M., Wang, H.-M., Datla, N., Ferrie, A.M.R., Keller, W.A., Oelck, M.M. Transformation of freshly isolated Brassica microspores and regeneration to fertile homozygous plants. pp. 816-818
31. Played a key role in the establishment of a consortium project (July, 1995 - July, 1998) which includes 10 canola industry organizations (Canola Council of Canada, Sask. Canola Dev. Comm., Canola Exporters Assoc., Agriculture Canada, Dow-Elanco, Limagrain Genetics, Pioneer HiBred, Plant Genetic Systems, University of Manitoba and Zeneca Seeds) undertaking collaborative research with PBI on the application of microspore mutagenesis to generate desirable fatty acid profiles in B. rapa. This project is partially supported by IRAP.
32. Along with two other PBI research officers, co-leads a collaborative project with the Canola Council of Canada and the Sask. Canola Dev. Comm. (partially supported by IRAP) on the construction of a cassette of genes for fungal disease resistance in canola, June 1995 - June 1998.
33. Member of a collaborative research team (led by P. Covello, PBI and also including Agriculture Canada scientists) employing molecular based strategies for enhancement of squalene production in canola. This project (Apr. 1995 - Mar. 1998) is supported by National Biotechnology Strategy funds and Agric. Dev. Funds (Sask.).
34. Member of a collaborative research team (led by Dr. G. Selvaraj, PBI and also including Agriculture Canada scientists) employing molecular-based strategies for reduction of sinapine in canola meal. This project (Apr. 1995 - Mar. 1998) is supported by National Biotechnology Strategy funds.
35. Member of a network undertaking research on productivity enhancement in oilseeds through alteration of carbohydrate metabolism (Apr. 1995 - Mar. 1998). The network includes Agriculture Canada (Ottawa, Saskatoon), NRC/PBI and Queen's University is receiving support from Canola Council of Canada, NSERC and the National Biotechnology Strategy.
36. Leader of a project on the development of a biotechnology (i.e. genetic transformation) base for yellow mustard (Sinapis alba). This three year project (Sept. 1995 - Sept. 1998) is supported by an Agric. Dev. Fund grant and involves cooperation with Agriculture Canada (Saskatoon) and the University of Saskatchewan.
37. Coordinator of collaborative project between PBI (Brassica Biotechnology and Promoter Technology Groups) and Dow-Elanco Canada for the application of biotechnology to improve canola meal quality (Sept. 1995 - Sept. 1998).
38. Supplement of the First International Conference in Egypt on Plant Tissue Culture and its Application. 1999. Georges, F., Hussain, A., Keller, W.A. Transcription patterns of the calreticulin gene in Brassica napus seedlings under different environmental stress conditions. pp. 26-40
39. XIV International Congress on Sexual Plant Reproduction, Banff. Ferrie, A.M.R., Stevenson, D., Keller, W.A. 2000. Induction of microspore embryogenesis in B. napus with polyethylene glycol.
40. Interviewed on numerous occasions by media representatives (including radio, television, newspaper); involved in the development of a 1993 documentary on biotechnology, "The Plant Gods".
41. Has made numerous presentations relevant to biotechnology and public awareness, consumer acceptance, etc.
42. As Head of the PBI Transgenic Plant Centre, responsible for ensuring that the objectives of the Centre are met. These include: 1) collaboration with plant breeding and biotechnology agencies (on a cost

recovery basis) to expedite commercialization of elite material produced through biotechnology; 2) enhancing the capability of PBI's research groups to undertake large scale, reliable assessment of genetically engineered plants; 3) providing guidance for the technical manager and 2 technical officers; and 4) advising the Director of Research and Director General on matters relating to assessment of transgenic plants.

43. As leader of the PBI Brassica Biotechnology Group, responsible for coordination of core research and collaborative initiatives and ensuring that the goals of the project are achieved; the group presently has 4 research officers, 3 research associates, 6 technical officers and approximately 25 guest researchers; provide supervision and/or advice to members of the group; participate in the PBI Planning and Review Committee (PARC) which reports to the Director General. Presently supervising one Research Associate, one NRC continuing technical officer, two visiting technical officers and four graduate students.

CULTIVAR DEVELOPMENT

1. Pandeya, R.S., J.E. Brandle, J.C.D. Ankersmit, W.D. Rogers and W.A. Keller. 1991. Delfield flue cured tobacco. (Information on this cultivar published in Can. J. Pl. Sci in 1991).

REFEREED PUBLICATIONS

1. KELLER, W. A., B. HARVEY, O. L. GAMBORG, R. A. MILLER, and D. E. EVELEIGH. 1970. Plant protoplasts for use in somatic hybridization techniques. *Nature*, 226: 280-282.
2. KAO, K. N., W. A. KELLER, and R. A. MILLER. 1970. Cell division in newly formed cells from protoplasts of soybean. *Exp. Cell Res.* 62: 338-340.
3. KAO, K. N., O. L. GAMBORG, R. A. MILLER, and W. A. KELLER. 1971. Cell divisions in cells regenerated from protoplasts of soybean and Haplopappus gracilis. *Nature, New Biology*, 232: 124-125.
4. MILLER, R. A., O. L. GAMBORG, W. A. KELLER, and K. N. KAO. 1971. Fusion and divisions of nuclei in multinucleated soybean protoplasts. *Can. J. Genet. Cytol.* 13: 347-353.
5. KELLER, W. A., and G. MELCHERS. 1973. The effects of high pH and calcium on tobacco leaf protoplast fusion. *Z. Naturforschung*, 28c, 737-741.
6. KELLER, W. A., T. RAJHATHY, and J. LACAPRA. 1975. In vitro production of plants from pollen in Brassica campestris. *Can. J. Genet. Cytol.* 17: 655-666.
7. DE LA ROCHE, I. A., and W. A. KELLER. 1977. The morphogenetic control of erucic acid synthesis in Brassica campestris. *Z. Pflanzenzüchtg.* 78: 319-326.
8. DE LA ROCHE, I. A., W. A. KELLER, J. SINGH, and D. SIMINOVITCH. 1977. Isolation of protoplasts from unhardened and hardened tissues of winter rye and wheat. *Can. J. Bot.* 55: 1181-1185.
9. KELLER, W. A., and K. C. ARMSTRONG. 1977. Embryogenesis and plant regeneration in Brassica napus anther cultures. *Can. J. Bot.* 55: 1383-1388.
10. MURRAY, B. E., R. J. HANDYSIDE, and W. A. KELLER. 1977. In vitro regeneration of shoots on stem explants of haploid and diploid flax (Linum usitatissimum). *Can. J. Cytol.* 19: 177-186.
11. KELLER, W. A., and K. C. ARMSTRONG. 1978. High frequency production of microspore-derived plants from Brassica napus anther cultures. *Z. Pflanzenzüchtg.* 80: 100-108.

12. KELLER, W. A., and K. C. ARMSTRONG. **1979**. Stimulation of embryogenesis and haploid production in Brassica campestris anther cultures by elevated temperature. *Theor. Appl. Genet.* 55: 65-67.
13. KELLER, W. A., and K. C. ARMSTRONG. **1981**. Dihaploid plant production by anther culture in autotetraploid marrowstem kale (Brassica oleracea L. var Acephala D.C.). *Can. J. Genet. Cytol.* 23: 259-265.
14. ARMSTRONG, K. C., and W. A. KELLER. **1981**. Chromosome pairing in haploids of Brassica campestris. *Theor. Appl. Genet.* 59: 49-52.
15. DOUGLAS, G. C., W. A. KELLER, and G. A. SETTERFIELD. **1981**. Somatic hybridization between Nicotiana rustica L. and N. tabacum L. I. Isolation and culture of protoplasts and regeneration of plants from cell cultures of wild-type and chlorophyll-deficient strains. *Can. J. Bot.* 59: 208-219.
16. DOUGLAS, G. C., W. A. KELLER, and G. SETTERFIELD. **1981**. Somatic hybridization between Nicotiana rustica L. and N. tabacum L. II. Protoplast fusion and selection and regeneration of hybrid plants. *Can. J. Bot.* 59: 220-227.
17. DOUGLAS, G. C., L. R. WETTER, C. NAKAMURA, W. A. KELLER, and G. SETTERFIELD. **1981**. Somatic hybridization between Nicotiana rustica L. and N. tabacum L. III. Biochemical, morphological, and cytological analysis of somatic hybrids. *Can. J. Bot.* 59: 228-237.
18. DOUGLAS, G. C., L. R. WETTER, W. A. KELLER, and G. SETTERFIELD. **1981**. Somatic hybridization between Nicotiana rustica and N. tabacum L. IV. Analysis of nuclear and chloroplast genome expression in somatic hybrids. *Can. J. Bot.* 59: 1509-1513.
19. NAKAMURA, C., W. A. KELLER, and G. FEDAK. **1981**. *In vitro* propagation and chromosome doubling of a Triticum crassum x Hordeum vulgare intergeneric hybrid. *Theor. Appl. Genet.* 60: 89-95.
20. KELLER, W.A. and Rajhathy, T. **1981**. Crop improvement: The role of biotechnology. *Agrologist* Summer 11-13.
21. ARMSTRONG, K. C., and W. A. KELLER. **1982**. Chromosome pairing in haploids of Brassica oleracea. *Can. J. Genet. Cytol.* 24: 735-739.
22. NAKAMURA, C., and W. A. KELLER. **1982**. Callus proliferation and plant regeneration from immature embryos of hexaploid triticales. *Z. Pflanzenzüchtg.* 88: 137-160.
23. NAKAMURA, C., and W. A. KELLER. **1982**. Plant regeneration from inflorescence cultures of hexaploid triticales. *Plant Sci. Lett.* 24: 275-280.
24. ARMSTRONG, K. C., C. NAKAMURA, and W. A. KELLER. **1983**. Karyotype instability in tissue culture regenerants of triticales (X Tritosecale culture Wittmack) cv. Welsh from 6-month-old callus cultures. *Z. Pflanzenzüchtg.* 91: 233-245.
25. DOUGLAS, G. C., W. A. KELLER, and G. SETTERFIELD. **1983**. Overcoming genetic incompatibility in hybridization of Nicotiana tabacum with Nicotiana rustica. In: *Plant tissue culture in relation to biotechnology*. Ed by A. E. Cassells and J. A. Kavanagh. Royal Irish Academy, pp. 16-28.
26. DOUGLAS, G. C., L. R. WETTER, W. A. KELLER, and G. SETTERFIELD. **1983**. Production of sexual hybrids of Nicotiana rustica x N. tabacum and N. glutinosa via *in vitro* culture of fertilized ovules. *Z. Pflanzenzüchtg.* 90: 116-129.
27. GLEDDIE, S., W. A. KELLER, and G. SETTERFIELD. **1983**. Somatic embryogenesis and plant regeneration from leaf explants and cell suspensions of Solanum melongena L. (eggplant). *Can. J. Bot.* 61: 656-666.

28. GLEDDIE, S., W. A. KELLER, G. SETTERFIELD, and L. R. WETTER. **1983**. Somatic hybridization between Nicotiana rustica and N. sylvestris. Plant Cell Tissue and Organ Culture 2: 266-283.
29. KELLER, W. A., and K. C. ARMSTRONG. **1983**. Production of haploids via anther culture in Brassica oleracea var. italica. Euphytica 32: 151-159.
30. KLIMASZEWSKA, K., and W. A. KELLER. **1983**. The production of haploids from Brassica hirta Moench (Sinapis alba L.) anther cultures. Z. Pflanzenphysiol. 109: 235-241.
31. KELLER W.A., Armstrong, K.C. and de la Roche, A.I. **1983**. The production and utilization of microspore-derived haploids in Brassica crops. Plant Cell Culture in Crop Improvement, Basic Life Sciences, S.K. Sen and K.L. Giles, Editors. 1983, Plenum Press: New York. p.169-183.
32. GLEDDIE, S., W. A. KELLER, and G. SETTERFIELD. **1985**. Plant regeneration tissue, cell and protoplast culture of several wild Solanum species. J. Plant Physiol. 119: 405-418.
33. GLEDDIE, S., G. FASSULIOTIS, W. A. KELLER, and G. SETTERFIELD. **1985**. Somatic hybridization as a potential method of transferring nematode and mite resistance into eggplant. Z. Pflanzenzüchtg. 94: 348-351.
34. KLIMASZEWSKA, K., and W. A. KELLER. **1985**. High frequency plant regeneration from thin cell layer explants of Brassica napus. Plant Cell Tissue Organ Culture 4: 183-197.
35. SOUZA MACHADO, V., J. SHUPE, and W. A. KELLER. **1985**. Cytoplasmic inherited atrazine resistance transmitted through anther culture in rutabaga. Z. Pflanzenzüchtg. 95: 179-184.
36. GLEDDIE, S., W. A. KELLER, and G. SETTERFIELD. **1986**. Somatic embryogenesis and plant regeneration from cell suspension-derived protoplasts of Solanum melongena L. (eggplant). Can. J. Bot. 64: 355-361.
37. GLEDDIE, S., W. A. KELLER, and G. SETTERFIELD. **1986**. Production and characterization of Somatic hybrids between Solanum melongena L. and S. sisymbriifolium Lam. Theor. Appl. Genet. 71: 613-621.
38. KLIMASZEWSKA, K., and W. A. KELLER. **1986**. Somatic embryogenesis in cell suspension and protoplast cultures of Brassica nigra (L.) Koch. J. Plant Physiol. 122: 251-260.
39. ORR, W., W. KELLER, and J. SINGH. **1986**. Induction of freezing tolerance in an embryogenic cell suspension culture of Brassica napus by abscisic acid at room temperature. J. Plant Physiol. 126: 22-32.
40. PANDEYA, R. S., G. C. DOUGLAS, W. A. KELLER, G. SETTERFIELD, and Z. A. PATRICK. **1986**. Somatic hybridization between Nicotiana rustica and N. tabacum: development of tobacco strains with disease resistance and elevated nicotine content. Z. Pflanzenzüchtg. 96: 346-352.
41. KLIMASZEWSKA, K., and W.A. KELLER. **1987**. Plant regeneration from stem cortex protoplasts of Brassica napus. Plant Cell Tissue and Organ Culture 8: 225-233.
42. KELLER, W.A., Arnison, P.G., and Cardy, B.J. **1987**. Haploids from gametophytic cells – recent developments and future prospects. Plant Tissue and Cell Culture. 223-241.
43. FAN, Z., K. ARMSTRONG, and W.A. KELLER. **1988**. Development of microspores in vivo and in vitro in Brassica napus L. Protoplasma 147: 191-199.

44. KLIMASZEWSKA, K., and W.A. KELLER. **1988**. Regeneration and characterization of somatic hybrids between Brassica napus and Diplotaxis harra. Plant Sci. 58: 211-222.
45. MEIJER, E.G.M., W.A. KELLER, and D.H. SIMMONDS. **1988**. Cytological abnormalities and aberrant microtubule organization during early divisions in mesophyll protoplast cultures of Medicago sativa and Nicotiana tabacum. Physiol. Plant. 74: 233-239.
46. PECHAN, P.M., and W.A. KELLER. **1988**. Identification of potentially embryogenic microspores in Brassica napus. Physiol. Plant. 74: 377-384.
47. PECHAN, P.M., W.A. KELLER, F. MANDY and M. BERGERON. **1988**. Selection of Brassica napus L. embryogenic microspores by flow sorting. Plant Cell Repts. 7: 396-398.
48. OHKAWA, Y., Bevis, E., and Keller, W.A. **1988**. Validity study of microspore culture method in Brassica crops. Cruciferae Newsletter. 13:75
49. PECHAN, P.M., and W.A. KELLER. **1989**. Induction of microspore embryogenesis in Brassica napus L. by gamma irradiation and ethanol stress. in vitro. In Vitro Cellular and Dev. Biology 25: 1073-1074.
50. GLEDDIE, S., AND W.A. KELLER. **1989**. Protoplast fusion technology. J. Tissue Culture Methods 12: 157-161.
51. GLEDDIE, S., W.A. KELLER, AND V. POYSA. **1989**. Plant regeneration from stem cortex protoplasts of a tomato hybrid. Plant Cell Reports 8: 21-24.
52. HUANG, B., AND W.A. KELLER. **1989**. Microspore culture technology. J. Tissue culture Method 12: 171-178.
53. MIKI, B., B. HUANG, S. BIRD, R. KEMBLE, D. SIMMONDS, AND W. KELLER. **1989**. A procedure for the microinjection of plant cells and protoplasts. J. Tissue Culture Methods 12: 139-144.
54. ARNISON, P.G., and W.A. KELLER. **1990**. A survey of the anther culture response of Brassica oleracea L. cultivars grown under field conditions. Plant Breeding 104: 125-133.
55. ARNISON, P.G., P. DONALDSON, L.C.C. HO, AND W.A. KELLER. **1990**. The influence of various physical parameters on anther culture of broccoli (Brassica oleracea var italica). Plant Cell Tissue and Organ Culture 20: 147-155.
56. ARNISON, P.G., P. DONALDSON, A. JACKSON, C. SEMPLE, AND W. KELLER. **1990**. Genotype - specific response of cultured broccoli (Brassica oleracea var italica). Plant Cell Tissue and Organ Culture 20: 217-222.
57. HUANG, B., S. BIRD., R. KEMBLE, D. SIMMONDS, W. KELLER, AND B. MIKI. **1990**. Effects of culture density, conditioned medium and feeder culture on microspore embryogenesis in Brassica napus L. cv Topas. Plant Cell Reports 8: 594-597.
58. KAO, H.M., W.A. KELLER, S. GLEDDIE, AND G.G. BROWN. **1990**. Efficient plant regeneration from hypocotyl protoplasts of broccoli Brassica oleracea. Plant Cell Reports 9: 311-315.
59. ORR, W., A.M. JOHNSON-FLANAGAN, W.A. KELLER, AND J. SINGH. **1990**. Induction of freezing tolerance in microspore-derived embryos of winter Brassica napus. Plant Cell Reports 8: 579-581.
60. TAYLOR, D.C., N. WEBER, E.W. UNDERHILL, M.K. POMEROY, W.A. KELLER, W.R. SCOWCROFT, R.W. WILEN, M.M. MOLONEY and L.A. HOLBROOK. **1990**. Storage-protein regulation and lipid accumulation in microspore embryos of Brassica napus L. Planta 181: 18-26.

61. DIJAK, M., A. SPROULE, W. KELLER, R. PANDEYA, AND S. GLEDDIE. **1991**. Transformation of Nicotiana tabacum, N. debneyi and N. rustica: Inheritance and protoplast expression of antibiotic resistance. *Plant Cell Tissue and Organ Culture* 25: 189-197.
62. HUANG, B., S. BIRD, R. KEMBLE, B. MIKI, AND W. KELLER. **1991**. Plant regeneration from microspore derived embryos of Brassica napus. Effect of embryo age, culture temperature, osmotic pressure and abscisic acid. *J. In Vitro Cell Dev. Biol.* 27: 28-31.
63. POMEROY, M.K., J.K.G. KRAMER, D.J. HUNT, AND W.A. KELLER. **1991**. Fatty acid changes during development of zygotic and microspore - derived embryos of Brassica napus. *Physiol. Plant* 81: 447-454.
64. SIMMONDS, D.H., N.E. LONG, AND W.A. KELLER. **1991**. High plating efficiency and plant regeneration frequency in low density protoplast cultures derived from an embryogenic Brassica napus cell suspension. *Plant Cell Tissue and Organ Culture* 27: 231-241.
65. SPROULE, A., P. DONALDSON, M. DIJAK, E. BEVIS, R. PANDEYA, W.A. KELLER, AND S. GLEDDIE. **1991**. Fertile somatic hybrids between transgenic Nicotiana tabacum and transgenic N. debneyi selected by dual antibiotic resistance. *Theor. Appl. Genet.* 82: 450-456.
66. TAKAHATA, Y., AND W.A. KELLER. **1991**. High frequency embryogenesis and plant regeneration in isolated microspore cultures of Brassica oleracea. *Plant Sci.* 74: 235-242.
67. TAKAHATA, Y., Brown, D.C.W., and Keller, W.A. 1991. Effect of donor plant age and inflorescence age on microspore culture of Brassica napus L. *Euphytica*. 58:51-55
68. BAILLIE, A.M.R., D.J. EPP, D. HUTCHESON and W.A. KELLER. **1992**. In vitro culture of isolated and regeneration of plants in Brassica campestris. *Plant Cell Reports* 11: 234-237. NRCC No. 33529.
69. BONFILS, A.C., S.C. GLEDDIE, J.A. WEBB and W.A. KELLER. **1992**. Somatic embryogenesis from cell suspension and protoplast culture of Capsella bursa-pastoris (L.) Medic. *In Vitro Cell Dev. Biol.* 2P: 137-142.
70. BONFILS, A.C., A. SPROULE, J.A. WEBB and W.A. KELLER. **1992**. Plant regeneration from stem explant and protoplast cultures of Brassica juncea (mustard). *Plant Cell Reports* 11: 614-617.
71. DATLA, R.S.S., J.K. HAMMERLINDL, B. PANCHUK, L. PELCHER AND W.A. KELLER. **1992**. Modified binary plant transformation vectors with the wild-type gene encoding NPTII. *Gene* 211: 383-384.
72. KAO, H.M., W.A. KELLER, S. GLEDDIE and G.G. BROWN. **1992**. Fusion-mediated synthesis of Brassica oleracea/Brassica napus hybrid plants with novel organelle DNA compositions. *Theor. Appl. Genet.* 83: 313-320.
73. TAKAHATA, Y., D.C.W. BROWN AND W.A. KELLER. **1992**. Effect of donor plant age and inflorescence age on microspore culture of Brassica napus. *Euphytica* 58: 51-55.
74. TAYLOR, D.C., A.M.R. FERRIE, W.A. KELLER, E.M. GIBLIN, E.W. PASS AND S.L. MacKENZIE. **1993**. Bioassembly of acyl lipids in microspore-derived embryos of Brassica campestris. *Plant Cell Reports* 12: 375-384.
75. BAUER-WESTON, B., W.A. KELLER, J. WEBB and S. GLEDDIE. **1993**. Production and characterization of asymmetric somatic hybrids between Arabidopsis thaliana and Brassica napus. *Theory of Applied Genetics* 86: 150-158.

76. DONALDSON, P., A. SPROULE, E. BEVIS, R. PANDEYA, W.A. KELLER and S. GLEDDIE. **1993**. Non-random chloroplast segregation in *Nicotiana tabacum* (+) *N. rustica* somatic hybrids selected by dual nuclear-encoded resistance. *Theor. Applied Genetics* 86: 465-473.
77. TAKAHATA, Y., D.C.W. BROWN, W.A. KELLER and N. KAIZUMA. **1993**. Dry artificial seeds and desiccation tolerance induction in microspore-derived embryos of broccoli. *Plant Cell, Tissue and Organ Culture* 35: 121-129.
78. TAYLOR, D.C., Ferrie, A.M.R., Keller, W.A., Giblin, E.M., Pass, E.W., and MacKenzie, S.L. **1993**. Bioassembly of acyl lipids in microspore-derived embryos of *Brassica campestris* L. *Plant Cell Reports*. 12:375-384.
79. FERRIE, A.M.R., D.J. EPP and W.A. KELLER. **1994**. Evaluation of *Brassica rapa* L. genotypes for microspore culture response and identification of a highly embryogenic line. *Plant Cell Reports* 14: 580-584.
80. FERRIE, A.M.R., C.E. Palmer and W.A. Keller. **1994**. Biotechnology applications for haploids. In *Biotechnological Applications of Plant Cultivars*. Shargool, P.D. and T.T. Ngo (Eds). CRC Press, Boca Raton, FL. pp.74-110.
81. FERRIE, A.M.R., D.J. Epp, W.A. Keller. **1995**. Evaluation of *Brassica rapa* L. genotypes for microspore culture response and identification of a highly embryogenic line. *Plant Cell Reports* 14: 580-584
82. PALMER, C.E., Keller, W.A. and Arnison, P.G. **1995**. Utilization of *Brassica* haploids. In *In Vitro Haploid Production in Higher Plants*. Jain, S.M., Sopory, S.K. and Veilleux, R.E. (Eds), Kluwer Academic Press, Dordrecht, pp. 173-192.
83. FERRIE, A.M.R., and Keller, W.A. **1995**. Microspore culture for haploid plant production. In *Plant Cell, Tissue and Organ Culture. Fundamental methods*, O.L. Gamborg and G.C. Phillips (eds). Springer-Verlag: Berlin pp.155-164.
84. FERRIE, A.M.R., PALMER, C.E., KELLER, W.A. **1995**. Haploid embryogenesis. *In Vitro embryogenesis in plants*, T.A. Thorpe (ed). Kluwer Academic Publishers: Dordrecht. pp.309-344
85. BONFILS, A-C., S.C. GLEDDIE, W.A. KELLER. **1995**. Regeneration of plants from protoplasts of *Capsella bursa-pastoris* (L) Medic. In *Biotechnology in Agriculture and Forestry. Vol.34, Plant Protoplasts and Genetic Engineering*. Y.P.S. Baja (ed), Springer-Verlag.
86. ZOU, J-T., V. KATAVIC, E.M. GIBLIN, D.L. BARTON, S.L. MacKENZIE, W.A. KELLER and D.C. TAYLOR. **1996**. Modification of seed oil content and acyl composition in *Brassicaceae* utilizing a yeast *sn-2* acyltransferase (SLC1-1) gene. *The Plant Cell* 9: 909-923.
87. PALMER, C.E., KELLER, W.A., ARNISON, P.G. **1996**. Experimental haploidy in *Brassica* species. *In Vitro Haploid Production in Higher Plants*. Jain, S.M., Sopory, S.K. and Veilleux, R.E. (eds), Kluwer Academic Press, Dordrecht, pp.143-172.
88. PALMER, C.E. and KELLER, W.A. **1996**. Pollen embryos in Pollen Biotechnology for Crop Production and Improvement, K.R. Shivanna and V.K. Sawhney (eds). Cambridge University Press: Cambridge.
89. HONG, H.P., J.L. GERSTER, R.S.S. DATLA, D. ALBANI, G. SCOLES, W. KELLER and L.S. ROBERT. **1997**. The promoter of *Brassica napus* polygalacturonase gene directs pollen expression of β -glucuronidase in transgenic *Brassica* plants. *Plant Cell Reports* 16: 373-378.
90. HONG, H.P., J.H.E. ROSS, J.L. GERSTER, S. RIGAS, R.S.S. DATLA, P. HATZOPOULOS, G. SCOLES, W. KELLER, D.J. MURPHY AND L.S. ROBERT. **1997**. Promoter sequence from two

different *Brassica napus* tapetal oleosin-like genes direct tapetal expression of β -glucuronidase in transgenic *Brassica* plants. *Plant Molecular Biology* 34: 549-555.

91. FERRIE, A.M.R. and KELLER, W.A. **1997**. Production of haploids in *Brassica* spp via microspore culture. In *Plant Tissue Manual: Fundamentals and Applications*. K. Lindsey (ed), Kluwer Academic Publishers, Dordrecht, Netherlands, pp.1-17
92. BABIC, V., R.S. Datla, G.J. Scoles, W.A. Keller. **1998**. Development of an efficient *Agrobacterium*-mediated transformation system for *Brassica carinata*. *Plant Cell Reports* 17: 183-188
93. SIMMONDS, D.H., W.A. Keller. **1998**. Significance of preprophase bands of microtubules in the induction of microspore embryogenesis of *Brassica napus*. *Plant* 208:383-391 (1999)
94. FERRIE, A.M., D.C. Taylor, S.L. MacKenzie, W.A. Keller. **1999**. Microspore embryogenesis of high sn-2 erucic acid *Brassica oleracea* germplasm.
95. SIMMONDS, D.H. and KELLER, W.A. **1999**. Significance of preprophase bands of microtubules in the induction of microspore embryogenesis of *Brassica napus*. *Planta*. 208: 383-391.
96. PALMER, C.E. and KELLER, W.A. **1999**. Transgenic oilseed *Brassicas*. In *Transgenic Plants*. Hui, Y.H., G.C. Khachatourians, A. McHughen, W.K. Nip, and R. Scorga (eds), Marcel Dekker, Inc., New York.
97. PALMER, C.E. and KELLER, W.A. **1999**. Haploidy. In: *Biology of Brassica Coenospecies*. C. Gomez-Campo (ed), Elsevier, Amsterdam, pp.247-286.
98. HUANG, J. (Alex), Rozina Hirji, Luc Adam, Kevin Rozwadowski, Joe Hammerlindl, Wilf Keller, Gopalan Silvaraj. **2000**. Genetic Engineering of Glycinebetaine Production Toward Enhancing Stress Tolerance in Plants: Metabolic Limitations. *Plant Physiology*, March 2000. Vol.122, pp.747-756.
99. MARILLIA, E.-F., J. Zou, V. Katavic, Q. Qi, C. Jako, D. Barton, W. Friesen, E.M. Giblin, K. Gossen, A. Kumar, P. Covello, W. Keller, S. MacKenzie, D. Taylor. **2000**. Metabolic engineering of brassica seeds oils: Improvement of oil quality and quantity and alteration of carbon flux. *Plant Genetic Engineering: Towards the Third Millennium*. Pp.182-188.
100. WATERER, D. S. Lee, G. Scoles, W.A. Keller. **2000**. Field evaluation of herbicide-resistant transgenic broccoli. *HortScience* 35(5): 930-932.
101. NAIR, RAMESH, Richard Joy, Eugen Kurylo, Xiaohong Shi, Joan Schnaider, Raju Datla, Wilf Keller, Gopalan Selvaraj. **2000**. Identification of CYP84 family of cytochrome P450-dependent mono-oxygenase genes in *Brassica napus* and perturbation of their expression for engineering sinapine reduction in the seeds. *Plant Physiology*, August 2000, Vol.123, pp.1623-1634.
102. KATAVIC, V., W. Friesen, D. Barton, K. Gossen, M. Giblin, T. Luciw, J. An, J. Zou, S. MacKenzie, W. Keller, D. Males, D. Taylor. **2000**. Utility of the *Arabidopsis* FAE1 and yeast SLC1-1 genes for improvements in erucic acid and oil content in rapeseed. 2000 Biochemical Society.
103. KATAVIC, VESNA, Winnie Friesen, Dennis Barton, Kalie Gossen, Michael Giblin, Tammy Luciw, Jing An, Jitao Zou, Sam MacKenzie, Wilf Keller, Daryl Males, David Taylor. **2001**. Improving erucic acid content in rapeseed through biotechnology: What can the *arabidopsis* FAE1 and the yeast SKC1-1 genes contribute. *Crop Sci.* 41:739-747.
104. TAYLOR, DAVID, Vesna Katavic, Jitao Zou, Sam MacKenzie, Wilf Keller, Jing An, Winnie Friesen, Dennis Barton, Kalie Pedersen, Mike Giblin, Yan Ge, Melanie Dauk, Cory Sonntag, Tammy Luciw, Daryl Males. **2001**. Field testing of transgenic rapeseed cv. Hero transformed with a years sn-2

acyltransferase results in increased oil content, erucic acid content and seed yield. *Molecular Breeding* 8: 317-322.

105. MARILLIA, ELIZABETH-FRANCE, Jim MacPherson, Ed Tsang, Katrien Van Audenhove, Wilf Keller, Jan GrootWassink. **2001**. Molecular cloning of a brassica napus thiohydroximate S-glucosyltransferase gene and its expression in *Escherichia coli*. *Physiologia Plantarum* 113: 176-184.
106. PALMER, CONSTANTINE, Suzanne Warwick, Wilf Keller. **2001**. Brassicacea (Cruciferae) Family, Plant Biotechnology, and Phytoremediation. *Internation J. of Phytoremediation*. Vol.3:, No.3, pp.245-287.
107. KATAVIC, VESNA, Winnie Friesen, Dennis Barton, Kalie Gossen, Mike Giblin, Tammy Luciw, Jing An, Jitao Zou, Sam MacKenzie, Wilf Keller, Daryl Males, David Taylor. **2001**. Improving erucic acid content in rapeseed through biotechnology: what can the arabidopsis FAE1 and Yeast SLC-1 genes contribute. Published in *Crop Sci.* 41:739-747 (2001).
108. ZHOU, YONGMING, Hong Wang, Susan Gilmer, Steve Whitwill, Wilf Keller, Larry Fowke. **2002**. Control of petal and pollen development by the plant cyclin-dependent kinase inhibitor ICK-1 in transgenic Brassica plants. *Plant* (2002) 215:248-257
109. TSANG, EDWARD, Zhiyuan Hu, Qing Chang, Ian McGregor, Wilf Keller. **2003**. Expression of a Brassica napus glutamate 1-semialdehyde aminotransferase in *Escherichia coli* and characterization of the recombinant protein. *Protein Expression and Purification* 29 (2003), pp:193-201
110. LEVESQUE-LEMAY, M., ALBANI, D., ALDCORN, D., HAMMERLINDL, J., KELLER, W., ROBERT, L.S., 2003. Expression of CCAAT-binding factor antisense transcripts in reproductive tissues affects plant fertility. *Plant Cell Reports* 21 (8): 804-808

1. **Development of procedures for regenerating plants from cultured somatic cells/explants.** During the last 25 years I have been actively involved in the development of regeneration protocols for a wide range of crop species including Brassica spp, Sinapis alba, Solanum spp, Lycopersicon esculentum, Amoracia spp, Lesquerella spp, Triticale, Linum usitatissimum, Medicago spp, Antirrhium majus and Echinacea spp. These methodologies have been successfully employed for clonal propagation, somatic hybridization and genetic transformation. Representative publication: Bonfils, A.C., Sproule, A., Webb, J.A., and Keller, W.A., 1992. Plant regeneration from stem and protoplast culture of Brassica juncea (mustard). Plant Cell Reports 11: 614-617.
2. **Development of methodology for producing haploids and doubled haploid plants of Brassica spp via anther and microspore culture.** During the last 25 years I have been engaged in the development, optimization, and application of haploid production systems in canola (B. napus, B. rapa), mustard (B. juncea, Sinapis alba) and cole crops (B. oleracea). In the last 10 years our efforts have particularly focussed on embryogenesis in isolated microspore cultures. Microspore embryogenesis technologies have been transferred to other organizations. Applications include breeding, mutagenesis, transformation, and seed biochemistry. Representative publication: Ferrie, A.M.R., Epp, D.J. and Keller, W.A., 1994. Evaluation of Brassica rapa L genotypes for microspore culture response and identification of a highly embryogenic line. Plant Cell Reports 14: 580-584.
3. **Development of somatic hybridization systems for solanaceous and cruciferous crops.** Primarily through the excellent work of graduate students, we were able to generate a number of somatic hybrids. We undertook detailed characterization of these plants and in one case we successfully transferred material into a breeding program, resulting in the development of a new variety. This work was carried out between 1975 and 1991. Representative publication: Bauer-Weston, B., Keller, W.A., Webb, J., and Gleddie, S., 1993. Production and characterization of asymmetric somatic hybrids between Arabidopsis thaliana and Brassica napus. Theor. Appl. Genet. 86: 463-473.
4. **Development/optimization of genetic transformation protocols for cruciferous crops.** During the last 10 years I have focussed on the subject of Agrobacterium-mediated gene transfer and its application to improvement of Brassica crops. We have been able to develop reliable and efficient methods for introducing genes into several species including B. napus, B. rapa, B. juncea, B. oleracea, B. carinata, Sinapis alba, Eruca sativa and Lesquerella fendleri. We have characterized transgenic plants and evaluated their progeny in the field. We are actively working with private and public sector organizations to evaluate the commercial potential of selected transgenic lines. Representative publication: Babic, V, Datla, R, Scoles, G, and Keller, WA. 1998. Development of an efficient Agrobacterium-mediated transformation system for Brassica carinata. Plant Cell Reports 17: 183-188.
5. **Production and evaluation of transgenic plants.** During the last 10 years I have collaborated with several internal (NRC) and external collaborators including promoter trapping, evaluation of transgene expression, and progeny testing. These efforts have contributed to the isolation of new plant promoters, the development of proprietary transgenic approaches for canola meal and oil improvement, and enhanced abiotic stress tolerance. Representative publication: Nair, R.B., Joy, R.W., Kurylo, E., Shi, X., Schnaider, J., Datla, R., Keller, W.A., and Selvaraj, G. 2000. Identification of a CYP84 Family of Cytochrome P450-Dependent Mono-Oxygenase Genes in Brassica napus and Perturbation of Their Expression for Engineering Sinapine Reduction in the Seeds. Plant Physiol. 123, 1623-1634

Refereed journal publications (career total = approximately 92)

Other refereed contributions: book chapters (last six years)

1. FERRIE, A.M.R. and W.A. KELLER. 1997. Production of haploids in Brassica spp via microspore culture. In Plant Tissue Manual: Fundamentals and Applications. K. Lindsey (Ed), Kluwer Academic Publishers, Dordrecht, Netherlands, pp 1-17.
2. PALMER, C.E. and KELLER, W.A. 1997. Pollen Embryos. In: Pollen Biotechnology for Crop Production and Improvement. K.R. Shivana and V.K. Sawhney (Eds), Cambridge Univ. Press, New York, USA, pp 392-422.
3. PALMER, C.E., W.A. KELLER, and P.G. ARNISON. 1996. Experimental haploidy in Brassica species. In In Vitro Haploid Production in Higher Plants. S.M. Jain, S.K. Sopory and R.E. Veilleux (Eds), Kluwer Academic Press, Dordrecht, pp 143-172.
4. PALMER, C.E., W.A. KELLER, and P.G. ARNISON. 1995. Utilization of Brassica haploids. In In Vitro Haploid Production in Higher Plants. S.M. Jain, S.K. Sopory and R.E. Veilleux (Eds), Kluwer Academic Press, Dordrecht, pp 173-192.
5. BONFILS, A-C., S.C. GLEDDIE, and W.A. KELLER. 1995. Regeneration of plants from protoplasts of Capsella bursa-pastoris (L) Medic. In Biotechnology in Agriculture and Forestry. Vol. 34, Plant Protoplasts and Genetic Engineering. Y.P.S. Bajaj (Ed), Springer Verlag.
6. FERRIE, A.M.R. and W.A. KELLER 1995. Microspore culture for haploid plant production. In: Fundamental Methods of Plant Cell Tissue and Organ Culture and Laboratory Operations. O.L. Gamborg and G.C. Phillips (Eds), Springer-Verlag, pp 155-164.
7. FERRIE, A.M.R., C.E. PALMER and W.A. KELLER. 1995. Haploid embryogenesis. In: In vitro embryogenesis in plants. T.A. Thorpe (Ed), Kluwer Academic Publishers, Dordrecht, pp 309-34.

SUBMITTED PAPERS

PUBLISHED CONFERENCE PROCEEDINGS (Full Text)

1. KAO, K. N., O. L. GAMBORG, M. R. MICHAYLUK, W. A. KELLER, and R. A. MILLER. 1973. The effects of sugars and inorganic salts on cell regeneration and sustained division in plant protoplasts. Colloques internationaux. pp. 207-213.
2. KELLER, W. A., B. L. HARVEY, K. M. KAO, R. A. MILLER, and O. L. GAMBORG. 1973. Determination of the frequency of interspecific protoplast fusion by differential staining. Colloques internationaux C.N.R.S. No. 212. Protoplastes et fusion de cellules somatiques vegetales, pp. 455-463.
3. MELCHERS, G., W. A. KELLER, and G. LABIB. 1974. Somatic hybridization. In: Modification of the information content of plant cells. Proc. John Innes Symp. Norwich, July 1974. Ed by R. Markham, D. R. Davies, D. A. Hopwood and R. W. Horne. North Holland/American Elsevier 1975. pp. 161-168.
4. KELLER, W. A., and G. R. STRINGAM. 1978. Production and utilization of microspore-derived haploid plants. In: Frontiers of Plant Tissue Culture 1978. Ed T. A. Thorpe, Univ. of Calgary Press, pp. 113-122.

5. KELLER, W. A., K. C. ARMSTRONG, and A. I. DE LA ROCHE. 1982. The production and utilization of microspore-derived haploids in Brassica crops: In: Plant Cell Culture in Crop Improvement. Ed K. L. Giles and S. K. Sen, Plenum Press, pp. 169-183.
6. KELLER, W. A., G. SETTERFIELD, S. GLEDDIE, and C. NAKAMURA. 1982. Production, characterization, and utilization of somatic hybrids of higher plants. In: Application of plant cell and tissue culture to agriculture and industry. Ed D. T. Tomes, B. E. Ellis, P. M. Harney, K. J. Kasha and L. R. Peterson. Univ. of Guelph, pp. 81-114.
7. KELLER, W. A., and ARMSTRONG, K. C. 1983. Production of Brassica napus haploids through, anther and microspore culture. In: Proc. Sixth Int. Rapeseed Cong. Vol. I: 239-245.
8. KELLER, W.A. 1981. The application of biotechnology to Canada's agricultural and forestry industries. In: Proc. Biol. Council Can. Symp. "Biotechnology" what directions for Canada, Ottawa, Oct. 23: 1980.
9. DOUGLAS, G. C., W. A. KELLER, and G. SETTERFIELD. 1983. Overcoming genetic incompatibility in hybridization of Nicotiana tabacum with Nicotiana rustica. In: Plant tissue culture in relation to biotechnology. Ed A. E. Cassells and J. A. Kavanagh. Royal Irish
10. KELLER, W. A. 1985. What biotechnology offers Canadian canola research. In: Grow with Canola. Proc. 18th Ann. Convention Canola Council of Canada, (Vancouver, Mar. 18-20 1985), Canola Council of Canada, pp. 37-44.
11. DOWNEY, R. K., W. A. KELLER, and W. D. BEVERSDORF. 1986. Genetic manipulation in crops. In: Proc. World Conf. on Emerging Technologies in the Fats and Oils Industry, Cannes, France, Nov. 3-9, 1985, pp. 331-336.
12. KELLER, W. A., P. G. ARNISON, and B. J. CARDY. 1987. Haploids from gametophytic cells - recent developments and future prospects. In: Plant Tissue and Cell Culture, pp. 223-241. Ed D. Somers et al., Alan R. Liss, Inc. New York.
13. DOWNEY, R.K. AND W.A. KELLER. 1993. Modifying oil and protein crop plants: new concepts and approaches. Proc. First International Crop Science Congress Chapter 86. Eds D.R. Buxton, R. Shibles, R.A. Forsberg, B.L. Blad, K.H. Asay, G.M. Paulson and R.F. Wilson, pp. 655-663.

BOOK CHAPTERS

1. KELLER, W.A. 1984. Anther culture of Brassica. In: Cell culture and somatic genetics of plants. Ed I.K. Vasil. Acad. Press. Vol. I, 302-310.
2. GLEDDIE, S., W.A. KELLER, and G. SETTERFIELD. 1985. Eggplant. In: Handbook of Plant Cell Culture. Vol. 4 Eds D. Evans, W. Sharp, P. Ammirato, and Y. Yamada. Macmillan, New York.
3. GLEDDIE, S., W. A. KELLER, and G. SETTERFIELD. 1985. Production of new hybrid plants through protoplast fusion. In: Biotechnolog - applications and research. Eds P.N. Cheremisinoff and R.P. Quелlette. Technomic Pub. Co. Lancaster, PA., pp. 231-242.
5. FERRIE, A.M.R., C.E. PALMER, and W.A. KELLER. 1994. Biotechnological applications of haploids. In Biotechnological Applications of Plant Cultures. Ed P. Shargool and T.T. Ngo, CRC Press, pp. 77-110.
6. PALMER, C.E. and W.A. KELLER. 1994. In Vitro methods for oilseeds. Plant Cell and Tissue Culture. Ed I.K. Vasil and T.A. Thorpe. Kluwer Academic Publishers, pp 413-455.

7. FERRIE, A.M.R. and W.A. KELLER 1995. Microspore culture for haploid plant production. In: Fundamental Methods of Plant Cell Tissue and Organ Culture and Laboratory Operations. Ed O.L. Gamborg and G.C. Phillips. Springer-Verlag, pp 155-164.
8. PALMER, C.E., W.A. KELLER, and P.G. ARNISON. 1996. Experimental haploidy in Brassica species. In In Vitro Haploid Production in Higher Plants. Ed by S.M. Jain, S.K. Sopory and R.E. Veilleux, Kluwer Academic Press, Dordrecht, pp 143-172.
9. PALMER, C.E., W.A. KELLER, and P.G. ARNISON. 1995. Utilization of Brassica haploids. In In Vitro Haploid Production in Higher Plants. Ed by S.M. Jain, S.K. Sopory and R.E. Veilleux, Kluwer Academic Press, Dordrecht, pp 173-192.
10. BONFILS, A-C., S.C. GLEDDIE, and W.A. KELLER. 1995. Regeneration of plants from protoplasts of Capsella bursa-pastoris (L) Medic. In Biotechnology in Agriculture and Forestry. Vol. 34, Plant Protoplasts and Genetic Engineering. Ed Y.P.S. Bajaj, Springer Verlag (In press).
11. FERRIE, A.M.R., C.E. PALMER and W.A. KELLER. 1995. Haploid embryogenesis. In: In vitro embryogenesis in plants. Ed T.A. Thorpe, Kluwer Academic Publishers, Dordrecht, pp 309-344.
12. FERRIE, A.M.R. and W.A. KELLER. 1996. Production of haploids in Brassica spp via microspore culture. In Plant Tissue Manual: Fundamentals and Applications. Ed K. Lindsey, Kluwer Academic Publishers, Dordrecht, Netherlands, pp 1-17.

CONFERENCE SUMMARIES, ABSTRACTS, MISCELLANEOUS REPORTS

1. KELLER W.A. 1969. Fluoride-A phytotoxic air pollutant. B.S.A. thesis, Department of Crop Science, University of Saskatchewan, Saskatoon, Sask., Canada.
2. KELLER, W.A. 1972. Isolation, fusion, and culture of plant protoplasts. Ph.D. thesis. University of Saskatchewan, Saskatoon, Canada.
3. MELCHERS, G., W. A. KELLER, and G. LABIB. 1974. The consequences of fusion of mesophyll protoplasts. Abstr. Third Int. Cong. Plant Tissue and Cell Culture, Leicester, July 1974.
4. MURRAY, B. E. , R. J. HANDYSIDE, and W. A. KELLER. 1976. In vitro culturing of haploids in flax (Linum usitatissimum) Abstr. Can. Genet. Soc. Ann. Meeting. Can. J. Genet. Cytol. 18: 568.
5. SIMINOVITCH, D., J. SINGH, W. A. KELLER, and I. A. DE LA ROCHE. 1976. Freezing and osmotic dehydration of winter rye cell protoplasts.
6. KELLER, S. A., J. LACAPRA, and K. C. ARMSTRONG. 1977. Embryogenesis and plant regeneration in anther cultures of Brassica species. In vitro 13: 146 (Abstr.).
7. DE LA ROCHE, A. I., and W. A. KELLER. 1977. Embryogenesis in Brassica campestris microspores: selection for modified fatty acid composition. Plant Physiol. (Suppl.) 59: 2 (Abstr.).
8. KELLER, W. A., K. C. ARMSTRONG, I. A. DE LA ROCHE, and J. LACAPRA. 1977. Production and utilization of Brassica species haploids. Proc. Ohio State Univ. Fourth Annual College of Biological Sciences Colloquim. Abstr.
9. KELLER, W. A., and K. C. ARMSTRONG. 1977. Anther culture studies in Brassica spp. Eucarpia Cruciferae Newsletter No. 2, pp. 36.

10. DE LA ROCHE, A. I., and W. A. KELLER. 1978. In vitro selection of modified fatty acid composition in anther-derived embryo cultures of B. campestris and B. napus. Fifth Int. Rapeseed Conf., Malmö, 12-16 June, 1978 (Abstr.).
11. DOUGLAS, G. C., G. SETTERFIELD, and W. A. KELLER. 1978. Somatic hybridization in Nicotiana spp. Fourth Int. Cong. Plant Tissue and Cell Culture (University of Calgary, Aug. 20-25, 1978). Abstracts p. 71.
12. KELLER, W. A., and K. C. ARMSTRONG. 1978. Production of Brassica campestris haploids via anther culture. Eucarpia. Cruciferae Newsletter No. 3: p. 133.
13. KELLER, W. A., K. C. ARMSTRONG, A. I. DE LA ROCHE, and J. LACAPRA. 1978. Potential use of anther culture techniques in breeding Brassica campestris. Fifth Int. Rapeseed Conf. Malmö, 12-16 June 1978. (Abstr.).
14. WILSON, A. C., W. A. KELLER, and A. I. DE LA ROCHE. The effect of low temperature on growth and lipid unsaturation of soybean cell cultures. Fourth Int. Cong. Plant Tissue and Cell Culture (University of Calgary, Aug. 20-25, 1978). Abstracts p. 85.
15. KELLER, W. A. 1980. Factors influencing microspore embryogenesis in Brassica spp. anther cultures. Fourth John Innes Symposium and 2nd International Haploid Conference, Norwich, Sept. 1979. (Abstr.).
16. DOUGLAS, G. C., W. A. KELLER, and G. SETTERFIELD. 1980. Production of somatic hybrid Nicotiana rustica + N. tabacum L. plants by protoplast fusion. Can. J. Genet. Soc. Ann. Meeting, Guelph, Ont. June 1980 (Abstr.).
17. KELLER, W. A. 1980. In vitro production of haploids in crop plants from microspores. Can. Genet. Soc. Ann. Meeting, Guelph, June 1980 (Abstr.).
18. SETTERFIELD, G., G. C. DOUGLAS, and W. A. KELLER. 1980. Somatic hybridization in Nicotiana. Can. Fed. Biol. Sci. Meeting, St. John's June 1980 (Abstr.).
19. KELLER, W. A. 1980. The role of anther pre-conditioning in the in vitro induction of microspore embryogenesis in Brassica spp. Can. Soc. Plant Physiologists Ann. Meeting, Calgary, July 1980 (Abstr.).
20. KELLER, W. A. 1980. Plant tissue culture research activities in Canada. Proc. I.D.R.C. Coop. Prog. Symp. on Can. Ag. Res. Priorities. Ottawa, Nov. 6-7, 1980 (IDRC-MR33), pp. 119-142.
21. DOUGLAS, G. C., G. SETTERFIELD, and W. A. KELLER. 1981. Production, characterization and potential utilization of Nicotiana spp. somatic hybrids. In vitro 17: 210 (Abstr.).
22. GLEDDIE, S., W. KELLER, and G. SETTERFIELD. 1981. Somatic embryogenesis and plant regeneration in eggplant (Solanum melongena L.). Plant Physiol. 67 (Suppl.): 27 (Abstr.).
23. KELLER, W. A., and T. RAJHATHY. 1981. Crop improvement - the role of biotechnology. Agrologist, Summer 1981, pp. 11-13.
24. GLEDDIE, S., W. KELLER, and G. SETTERFIELD. 1982. In vitro morphogenesis from tissue, cells, and protoplasts of Solanum melongena L. Proc. Fifth Int. Cong. Plant Tissue and Cell Culture, Tokyo, July 1982, pp. 139-140 (Abstr.).
25. BRAUN, R., and W. A. KELLER. 1983. Biotechnology in crop improvement. In: Biotechnology, research and development for Canada's agriculture and food system (Can. Ag. Res. Council), pp. 17-50.

26. GLEDDIE, S. C., W. A. KELLER, and G. SETTERFIELD. 1983. Somatic embryogenesis from tissues, cells, and protoplasts of eggplant (Solanum melongena L.). Proc. 26th Ann. Mtg. of the Can. Fed. Biol. Soc. p. 183 (Abstr.).
27. GLEDDIE, S. C., W. A. KELLER, and G. SETTERFIELD. 1983. The characterization of somatic hybrids between Nicotiana rustica and N. sylvestris. Proc. 1983 Ann. Mtg. of the Genetics Soc. of Canada. (Abstr.).
28. GLEDDIE, S. C., W. A. KELLER, and G. SETTERFIELD. 1983. Somatic embryogenesis and plant regeneration from protoplasts of eggplant (Solanum melongena L.). In: Protoplasts 1983 (Poster proc.), pp. 66-67. Ed I. Potrykus et al., Birkhauser, Basel.
29. KELLER, W. A. 1983. Overview of Canadian research activity in biotechnology as it relates to crop improvement. In: Proc. of the first German-Canadian meeting for cooperative research on the applications of biotechnology to plant strain improvement, Ottawa, March 14-17 1983. pp. 43-52.
30. KELLER, W. A. 1984. Biotechnology in plant improvement. In: Biotechnology in Agriculture (Talks presented as part of an Agriculture Canada Workshop for the National Biotechnology Advisory Committee, Ottawa, June 26, 1984). Research Branch Agriculture Canada, pp. 8-24.
31. KELLER, W. A., R. S. PANDEYA, S. C. GLEDDIE, and G. SETTERFIELD. 1985. Application of somatic hybridization technology to plant breeding. In: Proc. Int. Symp. on Genetic Manipulation. Peking, Oct. 22-26, 1984 (in press).
32. KELLER, W. A. 1986. The potential role of biotechnology in canola and mustard crop improvement. In: Proc. CP Symposium: Biotechnology in Western Canadian Forestry and Agriculture. Edmonton, Sept. 26-27, 1985.
33. GLEDDIE, S., W.A. KELLER, and G. SETTERFIELD. 1986. Somatic hybridization between Solanum melongena L. and S. sisymbriifolium Lam. In: Sixth Int. Cong. Plant Tissue and Cell Culture (Minneapolis, Minn., Aug. 3-8, 1986). Abstracts, p. 420.
34. KLIMASZEWSKA, K., and W.A. KELLER. 1986. Plant regeneration from cortex parenchyma protoplasts of Brassica napus and fusion with other cruciferous species. In: Sixth Int. Cong. Plant Tissue and Cell Culture (Minneapolis, Minn., Aug. 3-8, 1986). Abstracts, p. 390.
35. PECHAN, P.M., and W.A. KELLER. 1986. Developmental study of microspore embryogenesis. In: Sixth Int. Cong. Plant Tissue and Cell Culture (Minneapolis, Minn., Aug. 3-8, 1986). Abstracts, p. 157.
36. SIMMONDS, D.H. , and W.A. KELLER. 1986. Use of rhodamine 6G in cybrid selection in Brassica. In: Sixth Int. Cong. Plant Tissue and Cell Culture (Minneapolis, Minn., Aug. 3-8, 1986). Abstracts, p. 316.
37. SIMMONDS, D.H., AND W.A. KELLER. 1986. Organelle transfer in B. napus. Brassica Workshop, Third Crucifer Genetics Workshop; June 1986, University of Guelph.
38. SPROULE, A., W.A. KELLER, and J.A. WEBB. 1986. Plant regeneration from stem cortex protoplasts of Brassica juncea. In: Sixth Int. Cong. Plant Tissue and Cell Culture (Minneapolis, Minn., Aug. 3-8, 1986). Abstracts, p. 320.
39. KELLER, W.A., Z. FAN, P. PECHAN, N. LONG, and J. GRAINGER. 1988. An efficient method for culture of isolated microspores in Brassica napus. Seventh Int. Rapeseed Cong., Poland.
40. PECHAN, P.M., D.C.W. BROWN, and W.A. KELLER. 1988. Initiation of microspore embryogenesis in Brassica. (Abstr.). Proc. of The Tissue Culture Association Ann. Mtg., Las Vegas, Nevada, June 1988.

41. SIMMONDS, D., E.G.M. MEIJER, M. DIJAK, AND W. KELLER. 1988. The cytoskeleton in cultured cells and protoplasts. Second Canadian Plant Tissue Culture and Genetic Engineering Workshop, Ottawa, Ont.
42. SIMMONDS, D.H., Y. OHKAWA, AND W.A. KELLER. 1988. Interspecific transfer of mitochondria by microinjection into Brassica napus protoplasts. Fourth Intl. Congress of Cell Biology. Montreal, P.Q.
43. SIMMONDS, D., P. ARNISON, AND W.A. KELLER. Haploidy and Cell Biology of Microspore Embryogenesis. Proc. of the 5th Crucifer Genetics Workshop, April 7-9, 1989, U.C. Davis, CA, pp 11-14.
44. SIMMONDS, D.H., P. MALIGA, AND W.A. KELLER. 1989. Interspecific chloroplast transfer by microinjection in Nicotiana. Gordon Conference on Plant Cell and Tissue Culture. Plymouth, NH.
45. BAUER, B.J., S.C. GLEDDIE, W.A. KELLER AND J.A. WEBB. 1990. The production of asymmetric hybrids between Arabidopsis thaliana and Brassica napus using a mutant acetolactate synthase gene as a selectable marker. Proc. Seventh Int. Congr. on Plant Tissue and Cell Culture, Amsterdam, June 25-29, 1990.
46. BONFILS, A.C., S. GLEDDIE, J. WEBB AND W.A. KELLER. 1990. Capsella bursa - pastoris cell suspension and protoplast cultures. Proc. Seventh Int. Congr. Plant Tissue and Cell Culture, Amsterdam, June 25-29, 1990.
47. BONFILS, A.C., W.A. KELLER, AND J. WEBB. 1990. Plant regeneration from Brassica juncea (oriental mustard) protoplast culture. Sixth Crucifer Genetics Workshop, Oct. 1990, Cornell University.
48. GLEDDIE, S.C., W.A. KELLER, AND V. POYSA. 1990. Somatic hybridization between an intergeneric tomato hybrid (Solanum lycopersicoides x Lycopersicon esculentum) and an interspecific tomatoe hybrid (L. esculentum x L. peruvianum). Proc. Seventh Int. Congr. on Plant Cell Tissue and Cell Culture, Amsterdam, June 25-29, 1990.
49. HUANG, B., S. BIRD, E. HAGUE, R. KEMBLE, D. SIMMONDS, B. MIKI AND W.A. KELLER. 1990. Transformation of Brassica napus microspores by microinjection. Proc. Seventh Int. Congr. Plant Tissue and Cell Culture, Amsterdam, June 25-29, 1990.
50. KAO, H.M., S. GLEDDIE, W.A. KELLER, AND G. BROWN. 1990. Fusion-mediated synthesis of interspecific Brassica oleracea/Brassica napus hybrids with novel male-sterile cytoplasms. Sixth Crucifer Genetics Workshop, Oct. 1990, Cornell University.
51. PANDEYA, R.S., W.A. KELLER, G.C. DOUGLAS AND J.C.D. ANKERSMIT. 1990. Development of somatic hybridization in tobacco breeding: successful incorporation of nicotine and disease resistance from Nicotiana rustica to Nicotiana tabacum. Proc. Seventh Int. Cong. on Plant Tissue and Cell Culture, Amsterdam, June 25-29, 1990.
52. PANDEYA, R.S., A. SPROULE, M. DIJAK, S. GLEDDIE, W.A. KELLER, P. DONALDSON, AND E. BEVIS. 1990. An efficient somatic hybrid selection system: Fusion of transgenic tobacco (Nicotiana tabacum) with transgenic wild species (N. debneyii and N. rustica). Proc. Seventh Int. Cong. on Plant Tissue and Cell Culture, Amsterdam, June 25-29, 1990.
53. BAILLIE, A.M.R., D.J. EPP, W.A. KELLER AND D. HUTCHESON. 1991. In vitro culture of microspores and regeneration of plants in Brassica campestris. In: Proc. Eight Int. Rapeseed Cong. Saskatoon, Canada July 9-11, 1991.

54. BAUER-WESTON, B, S. GLEDDIE, J. WEBB and W. KELLER. 1991. The production and characterization of Asymmetric somatic hybrids between Brassica napus and Arabidopsis thaliana. In: Proc. Eight Int. Rapeseed Cong. Saskatoon, Canada July 9-11, 1991.
55. BONFILS, A.C., S.C. GLEDDIE, J.A. WEBB and W.A. KELLER. 1991. Plant regeneration from all suspension and protoplast cultures of Capsella bursa-pastoris (L.) Medic. In: Proc. Eight Int. Rapeseed Cong. Saskatoon, Canada July 9-11, 1991.
56. KAO, H.M., S. GLEDDIE, W. KELLER, AND G.G. BROWN. 1991. Fusion-mediated synthesis of interspecific Brassica oleracea/ B. napus hybrids with novel male sterile cytoplasm. In: Proc. Eight Int. Rapeseed Cong. Saskatoon, Canada July 9-11, 1991.
57. OELCK, M.M., C.V. PHAN, P. ECKES, D. DONN, G. RAKOW, and W.A. KELLER. 1991. Field resistance of canola transformants (Brassica napus L.) to Ignite (Phosphinotricin). In: Proc. Eight Int. Rapeseed Cong. Saskatoon, Canada July 9-11, 1991.
58. POMEROY, M.K., S.A. SPARACE and W.A. KELLER. 1991. Fatty acid and triacylglycerol biosynthesis in microspore embryos of Brassica napus. In: Proc. Eight Int. Rapeseed Cong. Saskatoon, Canada July 9-11, 1991.
59. SIMMONDS, D.H., C. GERVAIS and W.A. KELLER. 1991. Embryogenesis from microspores of embryogenic and non-embryogenic lines of Brassica napus. In: Proc. Eight Int. Rapeseed Cong. Saskatoon, Canada July 9-11, 1991.
60. BAILLIE, A.M.R., D.J. EPP and W.A. KELLER. 1992. The effect of carbohydrate source on Brassica campestris and B. napus microspore culture. Presentation at the 3rd Canadian Plant Tissue Culture and Genetic Engineering Mtg. (IAPTC) University of Guelph, June 17-19, 1992.
61. BAUER-WESTON, B., W.A. KELLER, C. BENNETT and R.S.S. DATLA 1992. The production of a bifunctional fusion gene, phosphinothricin methyl transferase: neomycin phosphotransferase, and its use as an effective selectable marker in tobacco and canola. Presentation at the 3rd Canadian Plant Tissue Culture and Genetic Engineering Mtg. (IAPTC) University of Guelph, June 17-19, 1992.
62. BONFILS, A.C., S.C. GLEDDIE, J.A. WEBB and W.A. KELLER. 1992. Molecular analyses of Brassica napus and Capsella bursa-pastoris somatic hybrid cell lines. Presentation at the 3rd Canadian Plant Tissue Culture and Genetic Engineering Mtg. (IAPTC) University of Guelph, June 17-19, 1992.
63. DATLA, R.S.S., J. HAMMERLINDL, B. PANCHUK and L.E. PELCHER and W.A. KELLER. 1992. Restored NPT II activity in plant transformation PBIN 19 enhances transformation efficiency in Brassica napus. Presentation at the 3rd Canadian Plant Tissue Culture and Genetic Engineering Mtg. (IAPTC) University of Guelph, June 17-19, 1992.
64. KELLER, W.A. 1992. Oilseed crop improvement through the application of cell culture and gene transfer technology. 83rd American Oil Chemists Society, Toronto, Ontario, May 10-14, 1992.
65. KELLER, W.A. 1992. The role of biotechnology in food crop improvement. International Food Day Symposium, Ottawa, Ontario, October 1992.
66. LEE, S.K., J. HAMMERLINDL and W.A. KELLER. 1992. The development of an efficient multiple shoot regeneration system in broccoli, (Brassica oleracea) suitable for transformation. 3rd Canadian Plant Tissue Culture and Genetic Engineering Mtg. (IAPTC) University of Guelph, June 17-19, 1992.
67. SWARTZ, M.J., S.R. ABRAMS and W.A. KELLER. 1992. Regeneration response of Brassica campestris cv R500 to some abscisic acid analogues. Plant Tissue Culture and Genetic Engineering Mtg. (IAPTC) University of Guelph, Guelph, Ontario, June 17-19, 1992.

68. OELCK, M.M., P. ECKER and W.A. KELLER. 1993. Development of HCN92 canola tolerant to the herbicide Harvest. Eighth Crucifer Genetics Workshop Program July 21-24, 1993, Saskatoon, Sask, Canada (abstr.) p. 43.
69. TAYLOR, D.C., A.M.R. FERRIE, W.A. KELLER, E.M. GIBLIN, E.W. PASS and S.L. MACKENZIE. 1993. Bioassembly of acyl lipids in microspore-derived embryos of Brassica campestris L. Eighth Crucifer Genetics Workshop Program July 21-24, 1993, Saskatoon, Sask, Canada (abstr.) p. 71.
70. FERRIE, A.M.R., D.J. EPP and W.A. KELLER. 1993. Evaluation of Brassica campestris genotype for microspore culture response. Eighth Crucifer Genetics Workshop Program July 21-24, 1993, Saskatoon, Sask, Canada (abstr.) p. 84.
71. FRIESEN, L., B. CHARTRAND, D. MALES, S. ABRAMS and W.A. KELLER. 1993. Effect of ABA and temperature on germination of microspore-derived embryos of Brassica juncea. Eighth Crucifer Genetics Workshop Program July 21-24, 1993, Saskatoon, Sask, Canada (abstr.) p. 85.
72. BABIC, V., R. DATLA and W.A. KELLER. 1993. Agrobacterium-mediated transformation of Brassica carinata. Eighth Crucifer Genetics Workshop Program July 21-24, 1993, Saskatoon, Sask, Canada (abstr.) p. 90.
73. BAUER-WESTON, B., R. DATLA, M. OELCK and W.A. KELLER. 1993. The use of a novel bifunctional fusion gene for T-DNA promoter tagging in plants. Eighth Crucifer Genetics Workshop Program July 21-24, 1993, Saskatoon, Sask, Canada (abstr.) p. 90.
74. DORMANN, M., F. KÖNIG, G. DONN, P. ECKES, C. BENNETT, M. OELCK and W.A. KELLER. 1993. Transformation of haploid Brassica napus. Eighth Crucifer Genetics Workshop Program July 21-24, 1993, Saskatoon, Sask, Canada (abstr.) p. 92.
75. EL-ROUBY, N., O.P. THANGSTAD, A. KOLENOVSKY, R. DATLA, J.W.D. GROOTWASSINK and W.A. KELLER. 1993. Molecular cloning and transformation of the gene cloning for the glucosinolate-degrading enzyme myrosinase. Eighth Crucifer Genetics Workshop Program July 21-24, 1993, Saskatoon, Sask, Canada (abstr.) p. 92.
76. LEE, S. and W.A. KELLER. 1993. Agrobacterium-mediated transformation of broccoli (Brassica oleracea var italica) cotyledons and regeneration of transgenic plants. Eighth Crucifer Genetics Workshop Program July 21-24, 1993, Saskatoon, Sask, Canada (abstr.) p. 94.
77. PALMER, C. and W.A. KELLER. 1993. The relationship of auxins to plant regeneration in Brassica campestris. Eighth Crucifer Genetics Workshop Program July 21-24, 1993, Saskatoon, Sask, Canada (abstr.) p. 96.
78. PUTTICK, D.M., V. BARGE, R. DATLA, L. PELCHER and W.A. KELLER. 1993. Production of transgenic Brassica napus plants with a proteinase inhibitor II gene. Eighth Crucifer Genetics Workshop Program July 21-24, 1993, Saskatoon, Sask, Canada (abstr.) p. 96.
79. SCHMIDT, J.F. and W.A. KELLER. 1993. Brassica juncea transformation using wild type Agrobacterium strain A208. Eighth Crucifer Genetics Workshop Program July 21-24, 1993, Saskatoon, Sask, Canada (abstr.) p. 96.
80. SWARTZ, M., J. HAMMERLINDL, C. CADOUX and W.A. KELLER. 1993. Introduction of a gene for phosphinothricin tolerance into Brassica rapa by Agrobacterium - mediated transformation. Eighth Crucifer Genetics Workshop Program July 21-24, 1993, Saskatoon, Sask, Canada (abstr.) p. 97.

81. WANG, H.M., C. BENNET, C. KINDRACHUK, P. ECKES, W.A. KELLER and M. OELCK. 1993. *Agrobacterium*-mediated transformation of Brassica napus with glufosinate ammonium tolerance. Eighth Crucifer Genetics Workshop Program July 21-24, 1993, Saskatoon, Sask, Canada (abstr.) p. 98.
82. DATLA, R., J. ANDERSON, V. BABIC, G. FEIST, J. HAMMERLINDL, W. KELLER, S. LEE, M. MARTIN AND G. SELVARAJ. 1995. Tagging developmental specific genes with GUS: NPT-II fusion gene as promoter trap construct. Signalling in Plant Development, Cold Spring Harbor, Sept. 27 - Oct. 1, 1995.
83. BABIC, V., R. DATLA, and W.A. KELLER. 1994. T-DNA tagging with a GUS::NPT promoterless gene fusion in Brassica carinata. Abstracts - 4th International Congress of Plant Molecular Biology, Amsterdam, June 19-24, 1994, International Society of Plant Mol. Biol. (Abstract No. 2089).
84. BAUER-WESTON, B., R. DATLA, M. OELCK, and W.A. KELLER. 1994. Analysis of promoter-tagged plants containing a bifunctional selectable marker gene. Abstracts - 4th International Congress of Plant Molecular Biology, Amsterdam, June 19-24, 1994, International Society of Plant Mol. Biol. (Abstract No. 2075).
85. HONG, H-P., R. DATLA, L. ROBERT, and W.A. KELLER. 1994. Transformation of Brassica napus with the tissue-specific promoters. Seventh International Congress of Plant Tissue and Cell Culture, Firenze, June 12-17, 1994. Published by Int. Assoc. Plant Tissue and Cell Culture, Abstract No. M-27, p 271.
86. LEE, S., R. DATLA, and W.A. KELLER. 1994. Efficient *Agrobacterium*-mediated genetic transformation in cotyledonary petiole explant cultures. Int. Cong Plant Tissue and Cell Culture, Firenze, June 12-17, 1994. Published by Int. Assoc. Plant Tissue and Cell Culture, Abstract No. M-27, p 271.
87. LEE, S., R. DATLA, and W.A. KELLER. 1994. Regeneration from cotyledonary petiole explants of Brassica oleracea via italica cultivars and efficient *Agrobacterium*-mediated genetic transformation. Abstracts - 4th International Congress of Plant Molecular Biology, Amsterdam, June 19-24, 1994, International Society of Plant Mol. Biol. (Abstract No. 2032).
88. LEE, S. and W.A. KELLER. 1994. A superior method for plant genomic DNA isolation with CTAB and without phenol. Abstracts - 4th International Congress of Plant Molecular Biology, Amsterdam, June 19-24, 1994, International Society of Plant Mol. Biol. (Abstract No. 2083).
89. LEE, S. and W.A. KELLER. 1994. Hot shot: Automation of microwave oven mediated DNA restriction. Abstracts - 4th International Congress of Plant Molecular Biology, Amsterdam, June 19-24, 1994, International Society of Plant Mol. Biol. (Abstract No. 2084).
90. BABIC, V., R. DATLA and W.A. KELLER. 1995. T-DNA tagging with a GUS::NPT-II promoterless gene fusion in Brassica carinata (Abstr.) In: Signalling in Plant Development, Cold Spring Harbor, New York, Sept. 27 - Oct. 1, 1995.
91. DATLA, R., J. ANDERSON, V. BABIC, G. FEIST, J. HAMMERLINDL, W.A. KELLER, S. LEE, M. MARTIN and G. SELVARAJ. 1995. Tagging developmental specific genes with a GUS:NPT-II fusion gene as a promoter trap construct. (abstract) In: Signalling in Plant Development, Cold Spring Harbor, September 27 - October 1, 1995.
92. PALMER, C.E., P. COVELLO, and W.A. KELLER. 1995. High frequency plant regeneration from explants of Lesquerella (Brassicaceae). International Symposium on Engineering Plants for Commercial Products and Applications, October 1-4, 1995, Lexington, Kentucky (poster presentation).

93. FERRIE, A.M.R. and W.A. KELLER. 1995. Development of methodology and applications of doubled haploids in B. rapa. Proc. of the 9th International Rapeseed Congress, Cambridge, July 4-7, 1995, p 807-809.
94. DORMANN, M., H-M. WANG, A.M.R. FERRIE, W.A. KELLER and M.M. OELCK. 1995. Successful transformation of freshly isolated Brassica microspores and their regeneration to fertile homozygous plants. Proc. of the 9th International Rapeseed Congress, Cambridge, July 4-7, 1995, p 816-818.
95. REED, D.W., J.K. HAMMERLINDL, C.E. PALMER, D.C. TAYLOR, W.A. KELLER and P.S. COVELLO. 1996. Hydroxy fatty acid biosynthesis and genetic transformation in the genus Lesquerella (Brassicaceae). 12th International Symposium on Plant Lipids, Toronto, ON, July 7-12, 1996.
96. KATAVIC, V., S. CAMPBELL, L. FREISEN, D. TAYLOR, W. KELLER AND D. PALMER. 1996. Agrobacterium-mediated genetic transformation of selected high erucic acid B. napus cultivars. 4th Canadian Plant Tissue Culture and Genetic Engineering Conference, Saskatoon, SK, June 1-4, 1996, Abstract 49, p. 103.
97. LEE, S., J. HAMMERLINDL, R. DATLA, G. SCOLES and W. KELLER. 1996. Agrobacterium-mediated speed transformation method for Brassica species. 4th Canadian Plant Tissue Culture and Genetic Engineering Conference, Saskatoon, June 1-4, 1996.
98. LEE, S., J. HAMMERLINDL, R. DATLA, G. SCOLES and W. KELLER. 1996. The development of efficient methodology for Agrobacterium-mediated transformation of broccoli (Brassica oleracea var. italica). 4th Canadian Plant Tissue Culture and Genetic Engineering Conference, Saskatoon, June 1-4, 1996.
99. LEE, S. and W.A. KELLER. 1996. Hot-shot: automation of microwave oven mediated DNA restriction system. 4th Canadian Plant Tissue Culture and Genetic Engineering Conference, Saskatoon, SK, June 1-4, 1996.
100. LEE, S., R. DATLA and W. KELLER. 1996. Promoter tagging in Brassica species through the use of a promoterless GUS::NPTII fused gene construct. 4th Canadian Plant Tissue Culture and Genetic Engineering Conference, Saskatoon, June 1-4, 1996.
101. LUCIW, T.L., J. AN, M.S.C. PEDRAS and W.A. KELLER. 1996. In vitro selection of microspores of Brassica napus using a phototoxin produced by the Blackleg fungus. 4th Canadian Plant Tissue Culture and Genetic Engineering Conference, Saskatoon, SK, June 1-4, 1996.
102. PALMER, C.E. and W.A. KELLER. 1996. Auxin type controls the pattern of shoot regeneration in horseradish (Armoracia rustic L.). 4th Canadian Plant Tissue Culture and Genetic Engineering Conference, Saskatoon, SK, June 1-4, 1996.
103. PALMER, C.E. and W.A. KELLER. 1996. The relationship of auxin pretreatment to shoot regeneration in explants of Brassica rapa. 4th Canadian Plant Tissue Culture and Genetic Engineering Conference, Saskatoon, SK, June 1-4, 1996.
104. PALMER, C.E., W.A. KELLER and P. COVELLO. 1996. Plant regeneration from explants of Lesquerella (Brassicaceae). 4th Canadian Plant Tissue Culture and Genetic Engineering Conference, Saskatoon, SK, June 1-4, 1996.
105. DATLA, R., W.A. KELLER and G. SELVARAJ. 1996. Transposon and T-DNA mutagenesis of plant genomes. 4th Canadian Plant Tissue Culture and Genetic Engineering Conference, Saskatoon, SK, June 1-4, 1996.

106. FERRIE, A.M.R., D.C. TAYLOR and W.A. KELLER. 1996. Microspore culture of high SN-2 erucic acid germplasm of B. oleracea. Plant Embryogenesis Workshop - From Single Cell to Plant, Hamburg, Germany, September 12-14, 1996.
107. HAMMERLINDL, J., D.I. MCGREGOR, M. OELCK, V. RIPLEY, G. RAKOW and W. KELLER. 1996. Agrobacterium-mediated transformation of Brassica juncea using phophinothricine selection. 4th Canadian Plant Tissue Culture and Genetic Engineering Conference, Saskatoon, SK, June 1-4, 1996.
108. HIRJI, R., J.K. HAMMERLINDL, A.E. WOYTOWICH, G.G. KHACHATOURIANS, R.S.S. DATLA, W.A. KELLER and G. SELVARAJ. 1996. Plasmid pHS723 and its derivatives: plant transformation vectors that permit efficient selection and progeny analysis. 4th Canadian Plant Tissue Culture and Genetic Engineering Conference, Saskatoon, SK, June 1-4, 1996.
109. HUSSAIN, A., J. BOURGEOIS, S.L. POLVI, E. TSANG, W.A. KELLER and F. GEORGES. 1996. Transcription patterns of myo-inositol 1-phosphate synthase (MIPS) in Brassica napus. 4th Canadian Plant Tissue Culture and Genetic Engineering Conference, Saskatoon, SK, June 1-4, 1996.
110. HUSSAIN A., W.A. KELLER and F. GEORGES. 1996. Isolation, characterization and transcription studies of the genes for myo-inositol 1-phosphate synthase (MIPS) and the 10kd chaperonin from Brassica napus during seed development. Gordon Conference on Photosynthetic CO₂ Fixation and Metabolism in Green Plants, Tilton, New Hampshire, August 18-23, 1996.
111. LEE, S. and W.A. KELLER. 1996. Regulated gene expression in transgenic plants. 10th Anniversary of the Association of Korean-Canadian Scientists and Engineers, Ottawa, ON, October 4-5, 1996.
112. TAYLOR, D.C., J-T. ZOU, V. KATAVIC, E.M. GIBLIN, D.L. BARTON, S. CAMPBELL, W.A. KELLER and S.L. MacKENZIE. 1996. Genetic modification of high erucic acid rapeseed: SHEAR delight. 4th Canadian Plant Tissue Culture and Genetic Engineering Conference, Saskatoon, SK, June 1-4, 1996, Abstract, p. 36.
113. TSANG, E.W.T., L.A. HOLBROOK, Q. CHANG, A.M.R. FERRIE, D.S.S. RAJU, M.M. MOLONEY and W.A. KELLER. 1996. Transient gene expression of β -glucuronidase from microspores of Brassica napus after microprojectile bombardment. 4th Canadian Plant Tissue Culture and Genetic Engineering Conference, Saskatoon, SK, June 1-4, 1996.
114. ZOU, J-T., V. KATAVIC, E.M. GIBLIN, D.L. BARTON, S.L. MacKENZIE, W.A. KELLER and D.C. TAYLOR. 1996. Modification of seed oil content and acyl composition in Brassicaceae utilizing a yeast SN-2 acyltransferase (SLC1-1) gene. 12th International Symposium on Plant Lipids, Toronto, ON, July 7-12, 1996.
115. DONG, J-Z., W. KELLER AND F. GEORGES. 1997. Abundant mRNAs at the early stages of seed development in Brassica napus. Fifth International Progress of Plant Molecular Biology, Singapore, September 21-27, 1997.
116. Datla, R., K. Rozwadowski, G. Feist, V. Babic, S. Lee, C. Jiang, J. Anerson, M. Martin, W. Keller and G. Selvaraj. 1997. An efficient T-DNA tagging system for generating transcriptional fusions in plants. Cold Spring Harbor Laboratory Meeting on Arabidopsis genome: from sequence to function. Cold Spring Harbor, NY, December 11-14, 1997.

MEMBERSHIP IN SOCIETIES

American Oil Chemist's Society (Canada Section)

Canadian Society of Plant Physiologists

International Association for Plant Tissue Culture

REFERENCES

Available upon request.

Last Revision: October 2003